

ATTACHMENT F-3
O'HARE MODERNIZATION EIS
AIRCRAFT GROUND NOISE ANALYSIS REPORT
(12/01/2004)

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O'Hare Modernization Environmental Impact Statement

Attachment F-3 Aircraft Ground Noise Analysis

HMMH Report No. 298930.065
December 1, 2004

Prepared for:

Crawford, Murphy & Tilly, Inc.
Chicago, IL 60602

O'Hare Modernization Environmental Impact Statement

Aircraft Ground Noise Analysis

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EXECUTIVE SUMMARY

Harris Miller Miller & Hanson Inc. (HMMH) conducted an evaluation of potential noise impacts caused by aircraft ground operations related to Alternative A (No Action) and Alternative C, the City's proposal. The evaluation included noise caused by aircraft taxiing and idling, aircraft ground maintenance run-ups, and use of Auxiliary Power Units (APUs) on certain aircraft. The study evaluated the following four alternatives:

- Build Out (2013) Alternative A
- Build Out (2013) Alternative C
- Build Out+5 (2018) Alternative A
- Build Out+5 (2018) Alternative C

Values of Day Night Average Sound Level (DNL) were computed for each of the alternatives at a set of noise prediction sites chosen to represent noise-sensitive locations on all sides of the Airport. Computed Build Out and Build Out+5 DNL values at representative noise sensitive sites within approximately one mile of the Airport's property line range from below 40 dB up to 62 dB. At most residential prediction sites, computed values fall within the DNL 40 dB to 50 dB range. Because no computed sound levels at noise-sensitive sites equal or exceed DNL 65 dB, there are no significant impacts attributed to aircraft ground operations noise.

TABLE OF CONTENTS

1	INTRODUCTION	1
2	TECHNICAL APPROACH.....	1
2.1	Noise Criteria	1
2.1.1	Regulatory Context	1
2.1.2	Thresholds of Significance.....	2
2.2	Analysis Methods.....	3
2.2.1	Sound Propagation Model.....	3
2.2.2	Noise Emission Level Data.....	4
2.2.2.1	Taxiing and Idling.....	4
2.2.2.2	Ground Maintenance Run-ups	5
2.2.2.3	Auxiliary Power Units.....	5
2.2.3	Operational Inputs.....	5
2.2.3.1	Taxiing and Idling.....	6
2.2.3.2	Ground Maintenance Run-ups	9
2.2.3.3	Auxiliary Power Units.....	9
3	RESULTS	11
3.1	Representative Noise Prediction Sites	11
3.2	Computed Sound Levels	11
3.2.1	Build Out (2013) Alternatives.....	11
3.2.2	Build Out+5 (2018) Alternatives	11
ATTACHMENT A	DESCRIPTION OF NOISE METRICS	A-1
ATTACHMENT B	NOISE EMISSION LEVEL DATA	B-1
ATTACHMENT C	MODELED AIRCRAFT GROUND OPERATIONS	C-1

LIST OF FIGURES

Figure 1 Modeled ground operations noise source locations – Alternative A 8

Figure 2 Modeled ground operations noise source locations – Alternative C 9

Figure 3 Noise prediction sites..... 12

LIST OF TABLES

Table 1	Computed Aircraft Ground Operations Sound Levels	13
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1 INTRODUCTION

Harris Miller Miller & Hanson Inc. (HMMH) conducted an evaluation of potential noise impacts caused by aircraft ground operations related to Alternative A (No Action) and Alternative C (City of Chicago's proposal). The evaluation included noise caused by aircraft taxiing and idling, aircraft ground maintenance run-ups, and use of Auxiliary Power Units (APUs) on certain aircraft. Separate evaluations addressed other noise sources related to the project including aircraft flight operations (including takeoff roll and thrust reverse upon landing), traffic on relocated roads, and trains on relocated railroad tracks.

The aircraft ground noise study evaluated the following four alternatives:

- Build Out (2013) Alternative A
- Build Out (2013) Alternative C
- Build Out+5 (2018) Alternative A
- Build Out+5 (2018) Alternative C

The remainder of this technical report provides the applicable criteria, describes the technical approach to the analysis, and provides the evaluation's results. Attachments an overview of the noise descriptors used in this report and detailed data used in the modeling process.

2 TECHNICAL APPROACH

This section of the report provides the applicable noise impact criteria and describes the analysis methods used in the evaluation.

2.1 Noise Criteria

2.1.1 *Regulatory Context*

The analysis of aviation noise impacts generally falls under the responsibility of the FAA. A list of Federal statutes and FAA regulations related to the consideration of noise impacts follows:

- 49 U.S.C. 47501-47507; The Aviation Safety and Noise Abatement Act of 1979, as amended
- 49 U.S.C. 40101 et seq., as amended by PL 103-305 (Aug. 23, 1994); The Federal Aviation Act of 1958
- The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968
- 49 U.S.C. 47101 et seq., as amended by PL 103-305 (Aug. 23, 1994); The Airport and Airway Improvement Act
- 49 U.S.C. 2101 et seq.; The Airport Noise and Capacity Act of 1990
- 49 U.S.C. 44715; The Noise Control Act of 1972

- 14 CFR part 150; Noise Control and Compatibility Planning for Airports Advisory Circular, 150/5020
- 14 CFR part 161; Notice and Approval of Airport Noise and Access Restrictions

2.1.2 Thresholds of Significance

Day Night Noise Level (DNL) is a cumulative measure of total sound energy generally compiled on an annual basis. The DNL represents a logarithmic average of the sound levels at a location over a 24 hour period, with a 10 decibel (dB) weighting penalty added to all sounds occurring during nighttime hours (between 10:00 p.m. and 7:00 a.m.). The 10 dB penalty represents the added intrusiveness of noise at nighttime because ambient sound levels during nighttime hours are typically about 10 dB lower than during daytime hours, and because of the annoyance associated with sleep disruption. (Attachment A describes the noise metrics used in this evaluation.)

In the Aviation Safety and Noise Abatement Act of 1979 (ASNA), Congress mandated that FAA develop an airport community noise metric that would be used by all federal agencies assessing or regulating aircraft noise. In 1980, the Federal Interagency Committee on Urban Noise (FICUN) initially established an annual average day night noise level (DNL) of 65 decibels (dBA) as the level of significant noise impact. The recommendations of the FICUN were adopted by the FAA in responding to Congress' requirement to select a noise metric. The FICUN land use compatibility recommendations were also embraced by the FAA in 14 CFR Part 150 (Table A), and serve as federal aircraft noise land use guidance.

This level of significance was subsequently re-examined and confirmed by the Federal Interagency Committee on Noise (FICON) in 1992. In accordance with this Federal policy, FAA Order 1050.1E states the following:

A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dBA noise exposure when compared to the no action alternative for the same timeframe. For example, an increase from 63.5 dBA to 65 dBA is considered a significant impact. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties. For example, the DNL 65 dBA threshold does not adequately address the effects of noise on visitors to areas within a national park or national wildlife refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute.

Aircraft noise exposure is customarily evaluated relative to the probable effect on human activities characteristic of specific land uses. Federal guidelines (14 CFR Part 150 Table A) and thresholds for evaluating such effects on land use are outlined in Section 5.2.2 of the Environmental Impact Statement. All land uses are considered to be compatible with noise less than DNL 65, but only certain activities are compatible at levels greater than DNL 65. As discussed above, changes in DNL of 1.5 dB or more in noise sensitive areas exceeding DNL 65 are considered to be significant.

In addition to the threshold of significance discussed above, the 1992 FICON recommended that examination of noise levels between DNL 65 and 60 dBA be conducted if analysis shows that noise sensitive areas at or above DNL 65 dBA will have an increase of DNL 1.5 dB or more. This analysis should identify noise-sensitive areas between DNL 60-65 dBA having an increase of DNL 3 dB or more due to the proposed action. The FICON recommendations also state that the potential for

mitigating noise in those areas should be considered, including consideration of the same range of mitigation options available at DNL 65 dBA and higher and eligibility for federal funding. As noted in FAA Order 1050.1E, the consideration of mitigation for noise impacts between DNL 60 and 65 "...is not to be interpreted as a commitment to fund or otherwise implement mitigation measures in any particular area."

2.2 Analysis Methods

The aircraft ground noise modeling effort projected values of DNL at representative prediction locations for each of the study alternatives listed in Section 1. The projections included the following sources of aircraft ground operations noise:

- Aircraft taxiing between arrival/departure runways and passenger gate areas or cargo areas.
- Aircraft idling while in departure queues.
- Aircraft idling while holding near gate areas.
- Aircraft ground maintenance run-ups in the Ground Run-up Enclosure (GRE) and at the Runway 32L and Runway 9R hold pads.
- Auxiliary Power Units (APUs) on cargo aircraft after arrival and prior to departure from air cargo areas.

APUs on air-carrier aircraft were not included in the evaluation because 400-Hertz power and pre-conditioned air would be provided by equipment built-in at each gate. In addition, because the noise exposure contours produced by the INM include both takeoff roll and use of thrust reversers upon landing, these noise sources were not included in the evaluation of aircraft ground operations.

For each type of operation and every prediction site, the modeling needed to account for:

- Sound propagation characteristics between the noise source and the prediction site,
- Noise emission level data for each type of aircraft ground operation, and
- Aircraft operational data; i.e. how many of each type of operation occurred at which locations during either the day or the night.

The follow sections of the report describe each of these components of the analysis.

2.2.1 Sound Propagation Model

The SoundPLAN computer model¹ was used to estimate sound propagation characteristics between each noise source and each prediction site. SoundPLAN provides an estimate of sound levels at a distance from a specific noise source, or sources, taking into account:

- Specific characteristics of each noise source including its frequency spectrum and directivity characteristics.
- Terrain features including relative elevations of noise sources, receivers, and intervening objects.

¹ SoundPLAN® Version 6.2 is the current release and was used in the evaluation. Documentation provided in SoundPLAN® User's Manual, Braunstein + Berndt GmbH, January 2004.

- Ground effects due to areas of pavement and unpaved ground. Large paved areas including airport ramp areas were specifically coded into the model. Composite characteristics were used for other areas including the airfield and residential areas.
- Shielding and reflections due to intervening buildings or other structures and diffracted paths around and over structures.
- Atmospheric effects on sound propagation. The SoundPLAN model includes several different methods of accounting for atmospheric effects on sound propagation. For this evaluation, the model's implementation of ISO Standard 9613-2² was used. ISO 9613-2 specifies use of "wind direction . . . with the wind blowing from the source to the receiver, and wind speed between approximately 1 m/s and 5 m/s ..." The equations in the Standard "also hold, equivalently, for average propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs on clear, calm nights." Use of this Standard provides a conservatively high estimate of community sound levels caused by ground-based airport sources. In addition, because the higher sound levels that exist over time have greater influence on the DNL than the lower levels, the Standard also applies to "a variety of meteorological conditions as they exist over months or years."

Because of these features, the SoundPLAN model is more appropriate for evaluation of aircraft ground operations than the Integrated Noise Model (INM), which is intended primarily for the evaluation of aircraft flight operations.

2.2.2 Noise Emission Level Data

The SoundPLAN model requires detailed noise emission level data to characterize each source included in the model. Data used in this evaluation included:

- One-third octave band spectra,
- Source directivity, and
- Source height.

This detailed information, which is not available in the INM 6.1 database, is necessary for detailed modeling of aircraft ground noise sources taking into account acoustical characteristics of various ground types (i.e., pavement, grass, etc.) and shielding provided by buildings, noise barriers, berms, and other terrain features. The following sections describe the sources of this information for the modeled aircraft ground operations. Attachment B provides tables showing the actual emission level data used as input to the SoundPLAN model for each type of modeled operation and aircraft type.

2.2.2.1 Taxiing and Idling

All aircraft included in the INM modeling for each scenario also were included in the ground noise taxi/idle modeling. Emission level data for taxiing and idling aircraft were based upon measurement data from similar previous studies and, when available, from manufacturer's data. The aircraft were divided into five representative categories based on the maximum gross takeoff weight listed in the INM 6.1 standard database. Emission level data for one representative aircraft type was then used to characterize each of the categories. The five groups and the representative aircraft types were:

² ISO Standard 9613-2, "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation," International Organization for Standardization, Geneva, 1996.

- Jumbo Air Carrier (B747),
- Heavy Air Carrier (B767),
- Large Air Carrier (B737),
- Regional and Corporate Jets (CRJ), and
- Propeller Aircraft (B1900).

2.2.2.2 Ground Maintenance Run-ups

The emission level data for ground run-ups were extracted from the INM 6.1 database after grouping all aircraft conducting ground run-ups into the same five categories used for the taxi/idle modeling, as described above. The extracted data included the INM's standard directivity pattern for all run-ups, overall sound levels at a reference distance as computed by the INM, and spectral data based upon the INM's spectral class for each of the five representative aircraft types.

2.2.2.3 Auxiliary Power Units

As noted above, APUs on air-carrier aircraft were not included in the evaluation because 400-Hertz ground power and pre-conditioned air would be provided by equipment built-in at each gate. APUs may be turned on briefly to facilitate starting an aircraft's main engines even when ground power is used. However, because the APU run times would be brief compared to overall taxi and idle time with the aircraft's main engines running, air-carrier aircraft APUs would make only an insignificant contribution to overall noise exposure at community locations.

In contrast, APUs on cargo aircraft may run for extended periods after aircraft arrive at and before they depart from cargo facilities. Cargo aircraft APUs were modeled at each of the air cargo areas under each alternative. The two most common cargo aircraft categories at ORD in all modeled cases are "heavy" and "jumbo" jets (as described in Section 2.2.2.1), represented in this evaluation by the B767 and B747, respectively. An evaluation of measured APU emission levels for these two aircraft gave similar results. Therefore, the B767 APU was used to represent all cargo aircraft APUs.

2.2.3 Operational Inputs

Operational inputs to the noise model included:

- Daily numbers of aircraft operations projected on an annual average basis for each modeled alternative and divided into daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM)
- Aircraft fleet mix (percentage of each type of aircraft) for each modeled alternative
- Average times spent taxiing, in departure queues, and holding in gate areas for each alternative
- Average APU run times for cargo aircraft
- Typical taxi paths to/from runways and gate areas or cargo and General Aviation (GA) ramp areas
- Daily numbers of ground maintenance run-ups projected on an annual average basis for each modeled alternative and divided into daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM)
- Percentage of ground maintenance run-ups occurring both in the GRE and in unmitigated locations for each alternative

- Typical ground maintenance run-up durations and power settings

The following sections describe the specific approaches used to account for each of these operational inputs.

2.2.3.1 *Taxiing and Idling*

For each of the four alternatives evaluated, the aircraft taxi noise model was based on the corresponding data provided in the EIS Simulation Data Package, including:

- Percentage of runway use by operation and aircraft category
- Percentage of gate use by operation and aircraft category
- Unimpeded taxi time between gate and runway, by operation
- Delay and queue time between gate and runway, by operation

The Airfield Circulation section of each EIS Simulation Data Package provided descriptions and schematic drawings of approximate taxi routes, for each combination of gate, runway and operation.

Based on the schematic diagram of taxi routes from each of the scenario's operating configurations, each taxi route was broken up into a finite number of taxiway segments. The discrete taxiway segments represent the aggregate of possible aircraft positions while taxiing. The segments were then numbered to construct a model where each of the routes was accounted for by some subset of the numbered taxi segments. Some segments were incorporated in multiple taxi routes.

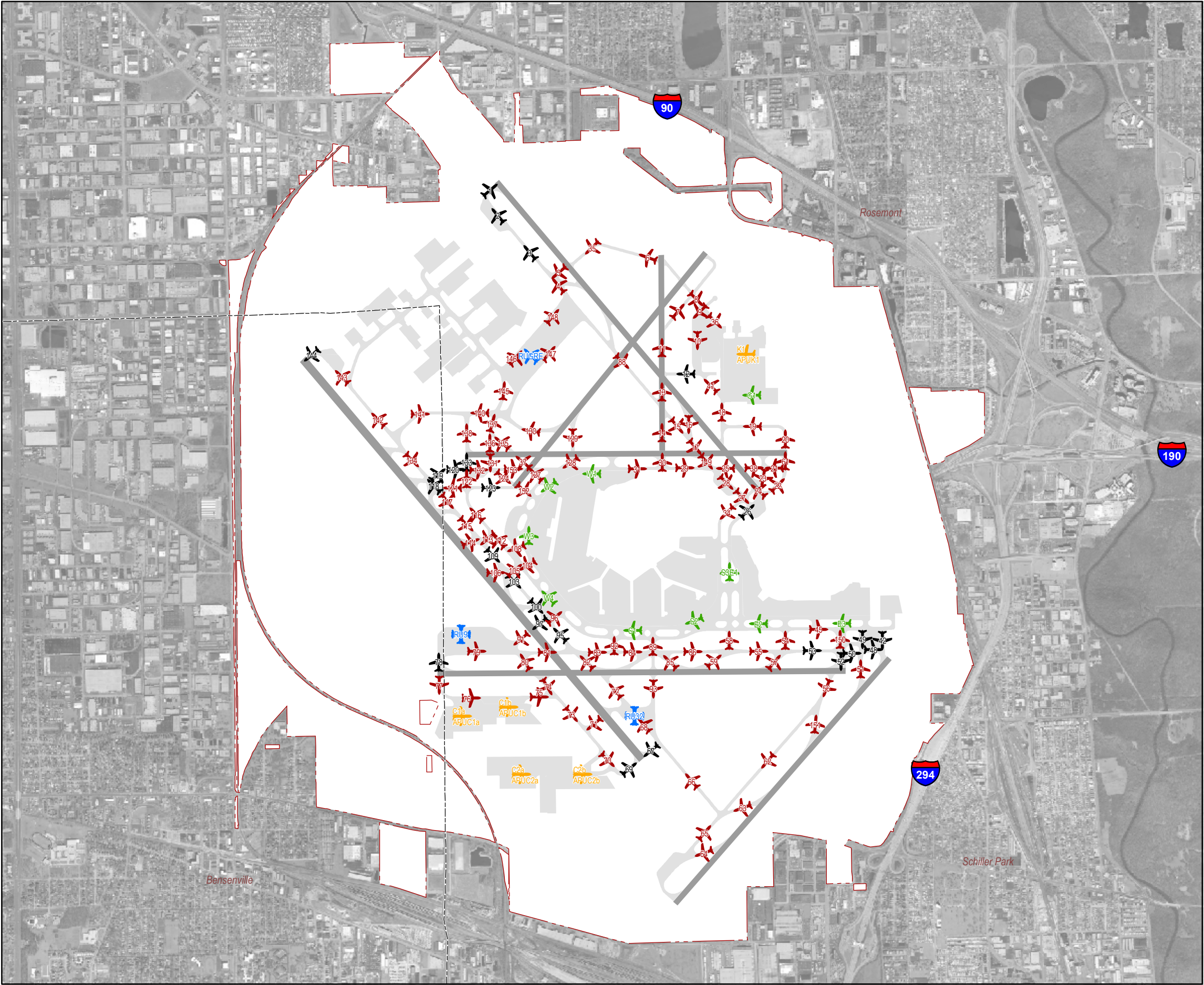
In a similar manner, the various gate areas were grouped by location and then broken into gate "segments" to make up the gate grouping. Typically, the gate segments represented both the area in close vicinity to the gate, as well as the taxiing area adjacent to the gate. In this way, the gate segment represented a gate area entry/exit point and encompassed taxi routes to and from each individual gate and ground maneuvers in the vicinity of each specific gate.

Based on gate, runway and operational data given in the EIS Simulation Data Package, the annual average percentage of use was determined for each taxi route. Each route also had a corresponding average unimpeded taxi time distributed along its length. The overall combined use of each segment (accounting for use by all taxi routes) was calculated by summing the percent data and time duration for each occurrence of the segment along a route and multiplying by the number of annual average daily operations for the given scenario. These results were then added to the average daily queue/delay time at appropriate segments. The resulting distribution identified the approximate time that taxiing and idling aircraft were present at each segment on an annual basis, including time spent in queues.

Figure 1 and Figure 2 show the modeled taxi and idle noise source locations. Attachment C provides a summary of the modeled taxi and idle durations for each aircraft category at each of the source locations shown. The noise sources on the figures are color-coded to identify modeled locations for taxiing/idling (including departure queues and ramp holds near gate areas), ground run-ups, and cargo aircraft APUs.

In addition, the figures show an assumed orientation of each noise source (i.e. the aircraft's heading). This is important for the modeling process because aircraft are directional noise sources, i.e., they produce sound with different loudness and frequency characteristics in different directions. In many cases, more than one orientation is modeled for a particular noise source. For example, aircraft taxi

on many of the taxiways in different directions at various times. In these cases, although the figures show only one orientation, the tables in Attachment C provide data for all directions.

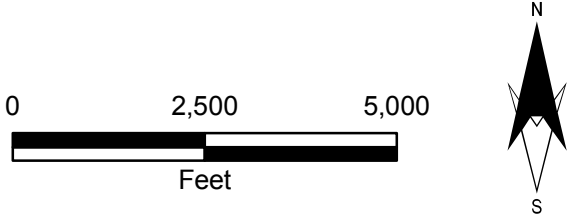


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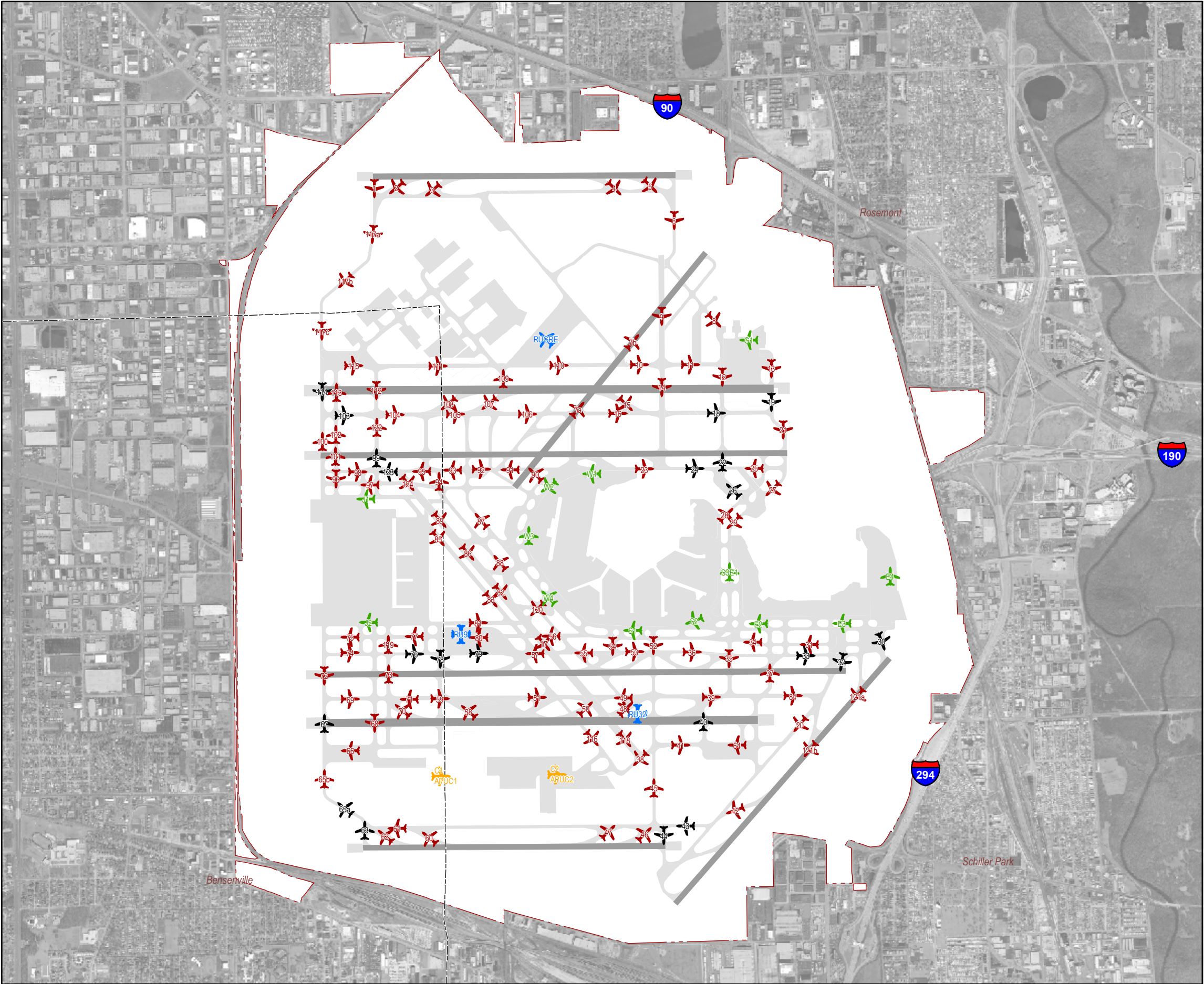
Legend

- Existing Airport Boundary
- County Boundary
- Terminal Gate Locations
- Taxi Locations
- Queue Locations
- Ground Run-up Locations
- Ground Run-up Locations (Multiple Directions)
- Cargo Gate / APU Locations



Modeled Ground Operations, Noise Source Locations Alternative A

► Figure 1

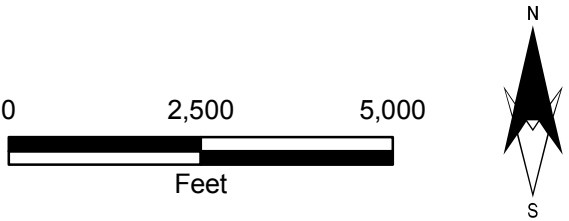


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Legend

- Future Airport Boundary
- County Boundary
- Terminal Gate Locations
- Taxi Locations
- Queue Locations
- Ground Run-up Locations
- Ground Run-up Locations (Multiple Directions)
- Cargo Gate / APU Locations



Modeled Ground Operations, Noise Source Locations Alternative C

► Figure 2

2.2.3.2 Ground Maintenance Run-ups

The distribution of run-up locations, orientations, and times was determined for each of five representative categories based on the maximum gross takeoff weight listed in the INM 6.1 standard database. The data were based upon a log of run-up operations provided by the City of Chicago Department of Aviation (DOA) for the period of May 1997 to July 2004. This distribution was applied to the total number of forecast run-ups for each year. The DOA provided data on run-up durations for various airlines. The average run-up duration was based upon a weighted average of the number of operations by each airline in the log of run-up operations from 1997 to 2004.

Three run-up locations were modeled: the GRE, Runway 9R hold pad, and Runway 32L hold pad. This analysis assumed that the current GRE location would move with the Alternative C improvements. The relocation of the GRE would not affect usage, although any differences in total aircraft operations between the action and no action alternatives were considered in estimating the number of run-ups. All run-ups in the GRE were assumed to occur with the aircraft heading in the direction of the GRE opening (i.e., nose out), and the GRE was assumed to provide between 0 dB and 20 dB of noise reduction, depending on the receiver's location relative to the GRE's open side.

For run-ups occurring on the Runway 9R hold pad and the Runway 32L hold pad, the aircraft orientation was broken down by north, south, east, and west as dictated by the logged wind direction at the time of the run-up.

Figure 1 and Figure 2 show the modeled ground run-up noise source locations. Attachment C provides a summary of the modeled ground run-up durations for each aircraft category at each of the source locations shown. In addition, to showing the location, the figures show the assumed aircraft orientation at each run-up site (i.e. the aircraft's heading).

2.2.3.3 Auxiliary Power Units

Figure 1 and Figure 2 show the modeled APU noise source locations. In addition, to showing the location, the figures show the assumed aircraft orientation at each source location. Attachment C provides a summary of the modeled APU durations for each aircraft category at each of the source locations shown. On average, over one hour of APU use was modeled for each air cargo arrival and for each air cargo departure.

3 RESULTS

3.1 Representative Noise Prediction Sites

The study area for the aircraft ground noise evaluation extended approximately one mile in all directions from ORD's property line. SoundPLAN modeling using an array of sample receivers at distances extending over two miles from the property line indicated that it was unlikely that aircraft ground operations would have a significant effect on overall noise levels at distances greater than about one mile from the airport. Within the roughly one-mile zone, approximately 80 representative prediction sites were selected at noise-sensitive locations. These prediction sites included the noise-sensitive facilities identified in **Chapter 4, Affected Environment** of the EIS and additional residential sites. Table 1 lists the prediction sites and Figure 3 shows their locations.

3.2 Computed Sound Levels

Table 1 reports computed sound levels due to aircraft ground operations for both Alternative A (No Action Alternative) and Alternative C in the Build Out (2013) and Build Out+5 (2018) years. The table provides DNL values, which take into account all aircraft taxiing, idling, ground maintenance run-ups, and cargo aircraft APU use occurring during a 24-hour annual average day. In addition to the computed sound levels, the table identifies the land use category at each prediction site (residential, educational, place of worship, park, or historic site) and provides the identification code used on Figure 3 to identify the prediction site. In some cases when Alternative C would acquire the locations represented by prediction sites, the table reports computed sound levels for only Alternative A.

3.2.1 Build Out (2013) Alternatives

Computed Build Out (2013) Alternative C DNL values at residential prediction sites vary from below 40 dBA up to about 53 dBA. Most residential prediction sites fall within the DNL 40 dBA to 50 dBA range. The highest computed sound level at a noise-sensitive site is DNL 61 dBA at the Westwood College of Technology. This site is located adjacent to the Airport near its southeast corner. Because no computed sound levels at noise-sensitive sites equal or exceed DNL 65 dBA, there are no significant noise impacts according to the criteria in Section 2.1.2.

3.2.2 Build Out+5 (2018) Alternatives

Computed Build Out+5 (2018) Alternative C DNL values at noise sensitive sites are up to about 1 dB higher than corresponding Build Out (2013) sound levels due to increased operations. Still, most residential prediction sites fall within the DNL 40 dBA to 50 dBA range. The highest computed sound level at a noise-sensitive site is DNL 62 dBA at the Westwood College of Technology. As in the Build Out year cases, no computed sound levels at noise-sensitive sites equal or exceed DNL 65 dBA, therefore, there are no significant noise impacts.



Source: Harris Miller Miller & Hanson Inc. Data Source: Northeastern Illinois Planning Commission; Leigh Fisher Associates, 2004; DuPage Co., 2002; ESRI, 2004



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Legend

- Existing Airport Boundary
- Future Airport Boundary
- County Boundary

ID
● Noise Prediction Sites

0 3,500 7,000
Feet



Noise Prediction Sites

► Figure 3

Table 1 Computed Aircraft Ground Operations Sound Levels

Prediction Site			Computed Day-Night Average Sound Level (DNL, dBA)			
Figure ID	Name	Land Use Category	Build Out Alt. A	Build Out Alt. C	Build Out+5 Alt. A	Build Out+5 Alt. C
P22	Administrative and Leisure Center		39.7	41.6	40.2	42.0
S23	Angel Town Elementary School	Educational	39.9	42.3	40.4	42.8
LS-84	August Schwerdtfeger's Law Office	Historic Site	41.7	48.1	41.9	49.0
W3	Bensenville Bible Church	Place of Worship	40.5	47.0	40.7	47.9
P3	Bretman Park	Park	44.4	---*	44.7	---*
N1	Bridgeway Of Bensenville	Nursing Home	40.7	48.2	40.9	49.5
W5	Calvary Baptist Church	Place of Worship	42.3	47.3	42.6	48.2
S2	Chippewa Elementary School	Educational	40.2	47.1	40.4	48.2
LS-88	Chippewa School	Historic Site	43.3	50.5	43.6	51.5
P2	DiOrio Park	Park	39.5	45.1	39.7	45.8
HP-4	Green Street School	Historic Site	41.6	47.9	41.9	48.8
S27	Iroquois Community School	Educational	40.3	42.6	40.9	43.1
LS-90	Janker's Building	Historic Site	40.4	46.0	40.7	46.7
S70	John F. Kennedy Elementary School	Educational	45.8	45.9	45.8	46.7
P67	Kennedy Park/Memorial Pool	Park	47.0	46.9	47.0	47.6
W43	Korean Philippi Presbyterian	Place of Worship	39.8	42.2	40.3	42.6
P25	Lake Park	Park	42.3	45.6	43.7	46.0
P4	Lions Park	Park	40.9	46.4	41.1	47.0
P47	North Park	Park	43.9	44.1	43.9	44.8
HP-10	Nursery Site/Schwerdtfeger Farm	Historic Site	48.6	---*	49.2	---*
S29	Orchard Place Elementary School	Educational	42.4	45.2	42.8	45.7
LS-78	Peace Church 1	Historic Site	40.9	47.1	41.1	47.9
LS-57	Peace Church 2	Historic Site	40.9	47.1	41.1	47.9
LS-63	Peace Church Manse	Historic Site	41.6	47.6	41.8	48.5
W13	Peace Church United Church-Christ	Place of Worship	38.4	41.5	38.4	42.3
HMMH01	Residential Site 1	Residential	36.4	40.5	38.5	40.7
HMMH04	Residential Site 4	Residential	37.1	39.2	38.8	39.6
HMMH05	Residential Site 5	Residential	39.9	43.2	42.0	43.6
HMMH06	Residential Site 6	Residential	41.9	45.1	44.1	45.5
HMMH10	Residential Site 10	Residential	43.7	46.5	45.9	46.9

Prediction Site			Computed Day-Night Average Sound Level (DNL, dBA)			
Figure ID	Name	Land Use Category	Build Out Alt. A	Build Out Alt. C	Build Out+5 Alt. A	Build Out+5 Alt. C
HMMH11	Residential Site 11	Residential	41.9	43.8	43.8	44.2
HMMH12	Residential Site 12	Residential	44.4	49.3	45.1	49.7
HMMH13	Residential Site 13	Residential	42.2	45.6	42.7	46.0
HMMH14	Residential Site 14	Residential	38.5	40.6	39.0	41.0
HMMH15	Residential Site 15	Residential	40.4	42.9	40.8	43.4
HMMH16	Residential Site 16	Residential	41.5	44.6	41.7	45.1
HMMH18	Residential Site 18	Residential	43.6	46.7	43.8	47.3
HMMH19	Residential Site 19	Residential	46.6	49.3	46.5	49.9
HMMH20	Residential Site 20	Residential	47.5	50.3	47.5	50.8
HMMH22	Residential Site 22	Residential	43.2	45.6	43.2	46.0
HMMH27	Residential Site 27	Residential	47.9	47.5	48.1	48.1
HMMH28	Residential Site 28	Residential	52.4	51.3	52.5	51.9
HMMH29	Residential Site 29	Residential	48.9	48.4	49.0	48.9
HMMH31	Residential Site 31	Residential	50.6	50.5	50.7	51.3
HMMH32	Residential Site 32	Residential	48.1	48.3	48.1	49.1
HMMH33	Residential Site 33	Residential	44.4	44.3	44.3	45.0
HMMH35	Residential Site 35	Residential	43.5	44.2	43.5	44.8
HMMH36	Residential Site 36	Residential	41.0	41.9	41.0	42.5
HMMH38	Residential Site 38	Residential	40.4	41.7	40.4	42.4
HMMH39	Residential Site 39	Residential	44.8	49.6	44.9	50.5
HMMH40	Residential Site 40	Residential	41.4	46.3	41.6	47.2
HMMH41	Residential Site 41	Residential	40.1	45.1	40.3	45.9
HMMH42	Residential Site 42	Residential	42.7	49.0	42.9	50.0
HMMH43	Residential Site 43	Residential	38.0	42.9	38.2	43.6
HMMH46	Residential Site 46	Residential	45.7	---	45.9	---
HMMH47	Residential Site 47	Residential	47.0	---	47.3	---
HMMH48	Residential Site 48	Residential	46.8	52.7	47.8	53.0
HMMH49	Residential Site 49	Residential	42.4	47.5	43.1	48.0
HMMH50	Residential Site 50	Residential	40.2	44.8	40.8	45.3
HMMH53	Residential Site 53	Residential	38.3	42.2	39.1	42.5
HMMH55	Residential Site 55	Residential	39.0	42.1	41.2	42.4
HP-6	Resthaven Cemetery	Historic Site	53.7	---	55.8	---
P8	Schuster Park	Park	45.7	---	46.2	---
P27	Seminole Park	Park	44.4	47.7	44.5	48.2
LS-65	Senne House	Historic Site	42.8	51.3	43.2	52.7
W15	St. Alexis	Place of Worship	32.4	35.2	33.0	35.7

Prediction Site			Computed Day-Night Average Sound Level (DNL, dBA)			
Figure ID	Name	Land Use Category	Build Out Alt. A	Build Out Alt. C	Build Out+5 Alt. A	Build Out+5 Alt. C
HP-7	St. Johannes Cemetery	Historic Site	61.2	---*	64.4	---*
S73	St. Maria Goretti School	Educational	44.4	44.6	44.5	45.4
P9	Sunrise Park	Park	41.7	47.0	41.9	47.8
P10	Sunset Park	Park	40.0	45.7	40.3	46.4
LS-58	Theater/Stores	Historic Site	43.3	49.4	43.6	50.2
S6	Tioga Elementary School	Educational	39.7	45.6	39.9	46.5
LS-79	Tioga School	Historic Site	39.8	45.8	39.9	46.7
S7	Tioga School Special Education	Educational	39.7	45.6	39.9	46.5
P12	Veterans Park	Park	41.2	47.4	41.6	48.3
U4	Westwood College of Technology	Educational	63.1	61.0	63.3	61.5
P70	Wm. M. Dooley Memorial Park	Park	54.0	52.9	54.1	53.7

(---* Indicates that site would be acquired under Alternative C scenarios.)

ATTACHMENT A DESCRIPTION OF NOISE METRICS

To assist reviewers in interpreting the complex noise metrics used in evaluating airport noise, we present below an introduction to relevant fundamentals of acoustics and noise terminology.

A.1 Introduction to Acoustics and Noise Terminology

Five acoustical descriptors of noise are introduced here in increasing degree of complexity:

- Decibel, dB;
- A-weighted decibel, dBA;
- Sound Exposure Level, SEL;
- Equivalent Sound Level, Leq; and
- Day-Night Average Sound Level, DNL.

These noise metrics form the basis for the majority of noise analysis conducted at most airports throughout the U.S.

A.1.1 *Decibel, dB*

All sounds come from a sound source -- a musical instrument, a voice speaking, an airplane passing overhead. It takes energy to produce sound. The sound energy produced by any sound source is transmitted through the air in sound waves -- tiny, quick oscillations of pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear.

Our ears are sensitive to a wide range of sound pressures. Although the loudest sounds that we hear without pain have about one million times more energy than the quietest sounds we hear, our ears are incapable of detecting small differences in these pressures. Thus, to better match how we hear this sound energy, we compress the total range of sound pressures to a more meaningful range by introducing the concept of sound pressure level.

Sound pressure levels are measured in decibels (or dB). Decibels are logarithmic quantities reflecting the ratio of the two pressures, the numerator being the pressure of the sound source of interest, and the denominator being a reference pressure (the quietest sound we can hear).

The logarithmic conversion of sound pressure to sound pressure *level* (SPL) means that the quietest sound that we can hear (the reference pressure) has a sound pressure level of about 0 dB, while the loudest sounds that we hear without pain have sound pressure levels of about 120 dB. Most sounds in our day-to-day environment have sound pressure levels on the order of 30 to 100 dB.

Because decibels are logarithmic quantities, combining decibels is unlike common arithmetic. For example, if two sound sources each produce 100 dB operating individually and they are then operated together, they produce 103 dB -- not the 200 decibels we might expect. Four equal sources operating simultaneously produce another three decibels of noise, resulting in a total sound pressure level of 106 dB. For every doubling of the number of equal sources, the sound pressure level goes up another three decibels. A tenfold increase in the number of sources makes the sound pressure level

go up 10 dB. A hundredfold increase makes the level go up 20 dB, and it takes a thousand equal sources to increase the level 30 dB.

If one noise source is much louder than another, the two sources operating together will produce virtually the same sound pressure level (and sound to our ears) that the louder source would produce alone. For example, a 100 dB source plus an 80 dB source produce approximately 100 dB of noise when operating together (actually, 100.04 dB). The louder source "masks" the quieter one. But if the quieter source gets louder, it will have an increasing effect on the total sound pressure level such that, when the two sources are equal, as described above, they produce a level three decibels above the sound of either one by itself.

Conveniently, people also hear in a logarithmic fashion. Two useful rules of thumb to remember when comparing sound levels are: (1) a 6 to 10 dB increase in the sound pressure level is perceived by individuals as being a doubling of loudness, and (2) changes in sound pressure level of less than about three decibels are not readily detectable outside of a laboratory environment.

A.1.2 A-Weighted Decibel, dBA

Another important characteristic of sound is its frequency, or "pitch." This is the rate of repetition of the sound pressure oscillations as they reach our ear. When analyzing the total noise of any source, acousticians often break the noise into frequency components (or bands) to determine how much is low-frequency noise, how much is middle-frequency noise, and how much is high-frequency noise. This breakdown is important for two reasons:

- (1) People react differently to low-, mid-, and high-frequency noise levels. This is because our ear is better equipped to hear mid and high frequencies but is quite insensitive to lower frequencies. Thus, we find mid- and high-frequency noise to be more annoying.
- (2) Engineering solutions to a noise problem are different for different frequency ranges. Low-frequency noise is generally harder to control.

The normal frequency range of hearing for most people extends from a low frequency of about 20 Hz to a high frequency of about 10,000 to 15,000 Hz. People respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 to 2,000 Hz. Acousticians have developed several filters which roughly match this sensitivity of our ear and thus help us to judge the relative loudness of various sounds made up of many different frequencies. The so-called A-weighting network, does this best for most environmental noise sources. Sound pressure levels measured through this filter are referred to as A-weighted sound levels (measured in A-weighted decibels, or dBA).

The A-weighting network significantly discounts those parts of the total noise that occur at lower frequencies (those below about 500 Hz) and also at very high frequencies (above 10,000 Hz) where we do not hear as well. The network has very little effect, or is nearly "flat," in the middle range of frequencies between 500 and 10,000 Hz where our hearing is most sensitive. Because this network generally matches our ears' sensitivity, sounds having higher A-weighted sound levels are judged to be louder than those with lower A-weighted sound levels, a relationship which otherwise might not be true. It is for this reason that A-weighted sound levels are normally used to evaluate environmental noise sources. Figure A.1 presents typical A-weighted sound levels of several common environmental sources.

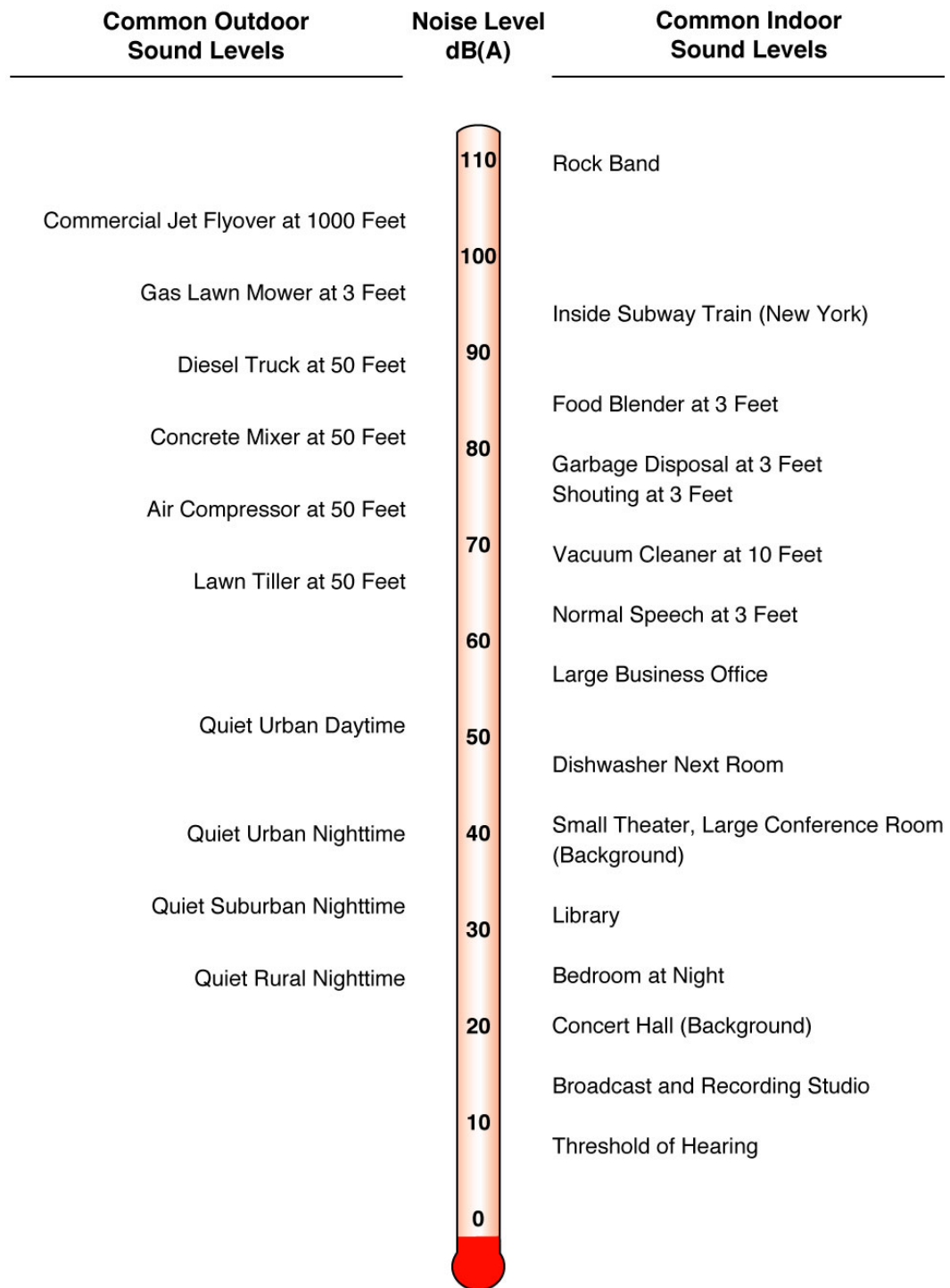


Figure A.1 Common environmental sound levels, in dBA

An additional dimension to environmental noise is that A-weighted levels vary with time. For example, the sound level increases as an aircraft approaches, then falls and blends into the background as the aircraft recedes into the distance (though even the background varies as birds chirp, the wind blows, or a vehicle passes by). This is illustrated in Figure A.2.

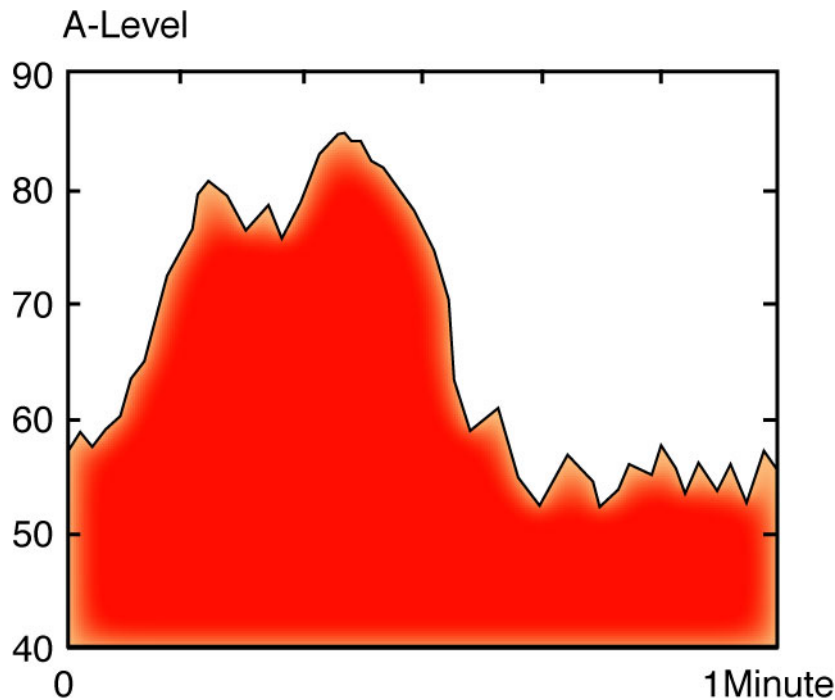


Figure A.2 Variation in the A-weighted sound level over time

Because of this variation, it is often convenient to describe a particular noise "event" by its maximum sound level, abbreviated as L_{\max} . In Figure A.2, the L_{\max} is approximately 85 dBA. However, the maximum level describes only one dimension of an event; it provides no information on the cumulative noise exposure generated by a sound source. In fact, two events with identical maximum levels may produce very different total exposures. One may be of very short duration, while the other may continue for an extended period and be judged much more annoying. The next section introduces a measure that accounts for this concept of a noise "dose."

A.1.3 Sound Exposure Level, SEL

The most common measure of cumulative noise exposure for a single aircraft fly-over is the Sound Exposure Level, or SEL. SEL is an accumulation of the sound energy over the duration of a noise event. The lightly shaded area in Figure A.3 illustrates the portion of the sound energy included in this dose. To account for the variety of durations that occur among different noise events, the noise dose is normalized (standardized) to a one-second duration. This normalized dose is the SEL; it is shown as the darkly shaded area in Figure A.3. Mathematically, the SEL is the summation of all the noise energy compressed into one second.

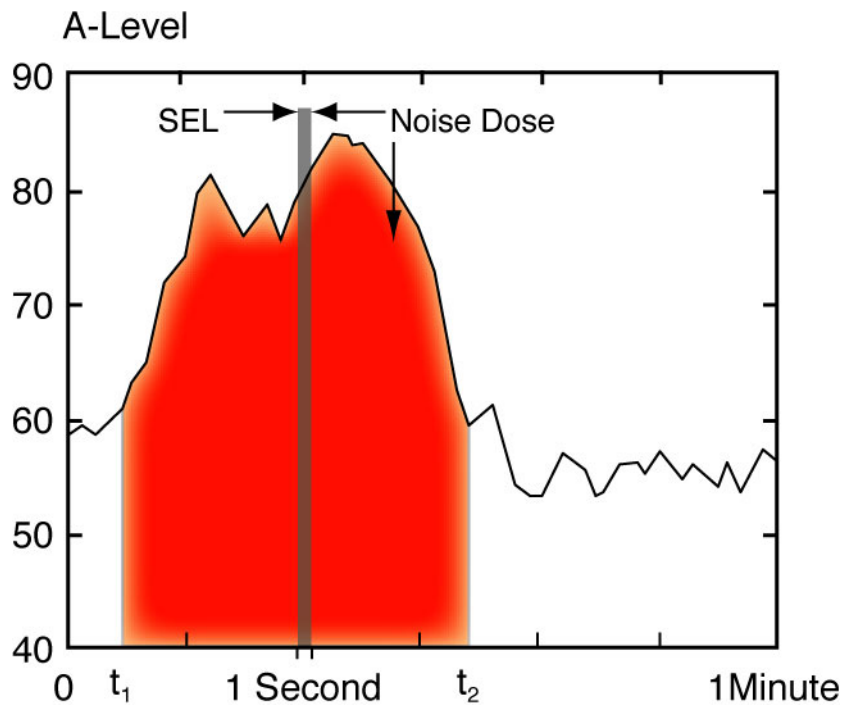


Figure A.3 Sound exposure level

Note that because the SEL is normalized to one second, it will almost always be larger in magnitude than the maximum A-weighted level for the event. In fact, for most aircraft overflights, the SEL is on the order of 7 to 12 dBA higher than the L_{\max} . Also, the fact that it is a cumulative measure means that not only do louder fly-overs have higher SEL than do quieter ones, but also fly-overs with longer durations have greater SEL than do shorter ones.

With this metric, we now have a basis for comparing noise events that generally matches our impression of the sound -- the higher the SEL, the more annoying it is likely to be. In addition, SEL provides a comprehensive way to describe a noise event for use in modeling noise exposure. Computer noise models base their computations on these SELs.

A.1.4 Equivalent Sound Level, L_{eq}

The Equivalent Sound Level, abbreviated L_{eq} , is a measure of the exposure resulting from the accumulation of A-weighted sound levels over a particular period of interest -- for example, an hour, an eight-hour school day, nighttime, or a full 24-hour day. However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric.

L_{eq} may be thought of as a constant sound level over the period of interest that contains as much sound energy as the actual time-varying sound level. This is illustrated in Figure A.4. The equivalent level is, in a sense, the total sound energy that occurred during the time in question, but spread

evenly over the time period. It is a way of assigning a single number to a time-varying sound level. Since L_{eq} includes all sound energy, it is strongly influenced by the louder events.

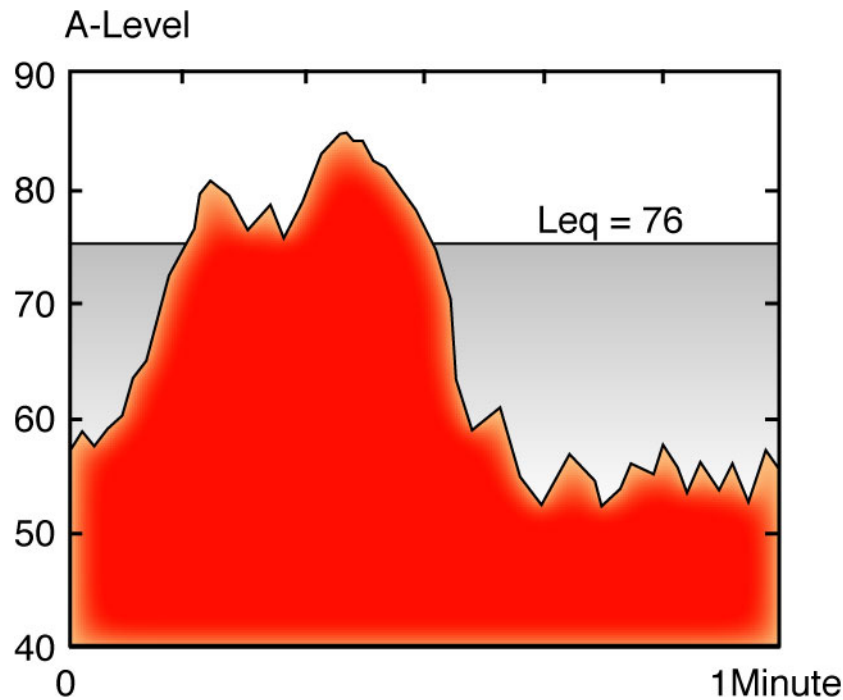


Figure A.4 Example of a 1-minute equivalent sound level

As for its application to airport noise issues, L_{eq} is often presented for consecutive one-hour periods to illustrate how the hourly noise dose rises and falls throughout a 24-hour period as well as how certain hours are significantly affected by a few loud aircraft.

A.1.5 Day-Night Average Sound Level, DNL

In the previous sections, we have been addressing noise measures that account for the moment-to-moment or short-term fluctuations in A-weighted levels as sound sources come and go affecting our overall noise environment. The Day-Night Average Sound Level (DNL) represents a concept of noise dose as it occurs over a 24-hour period. It is the same as a 24-hour L_{eq} , with one important exception; DNL treats nighttime noise differently from daytime noise. In determining DNL, it is assumed that the A-weighted levels occurring at night (10 p.m. to 7 a.m.) are 10 dB louder than they really are. This 10 dB penalty is applied to account for greater sensitivity to nighttime noise, and the fact that events at night are often perceived to be more intrusive because nighttime ambient noise is less than daytime ambient noise.

Earlier, we illustrated the A-weighted level due to an aircraft event. The example is repeated in the top frame of Figure A.5. The level increases as the aircraft approaches, reaching a maximum of 85 dBA, and then decreases as the aircraft passes by. The ambient A-weighted level around 55 dBA is due to the background sounds that dominate after the aircraft passes. The shaded area reflects the noise dose that a listener receives during the one-minute period of the sample.

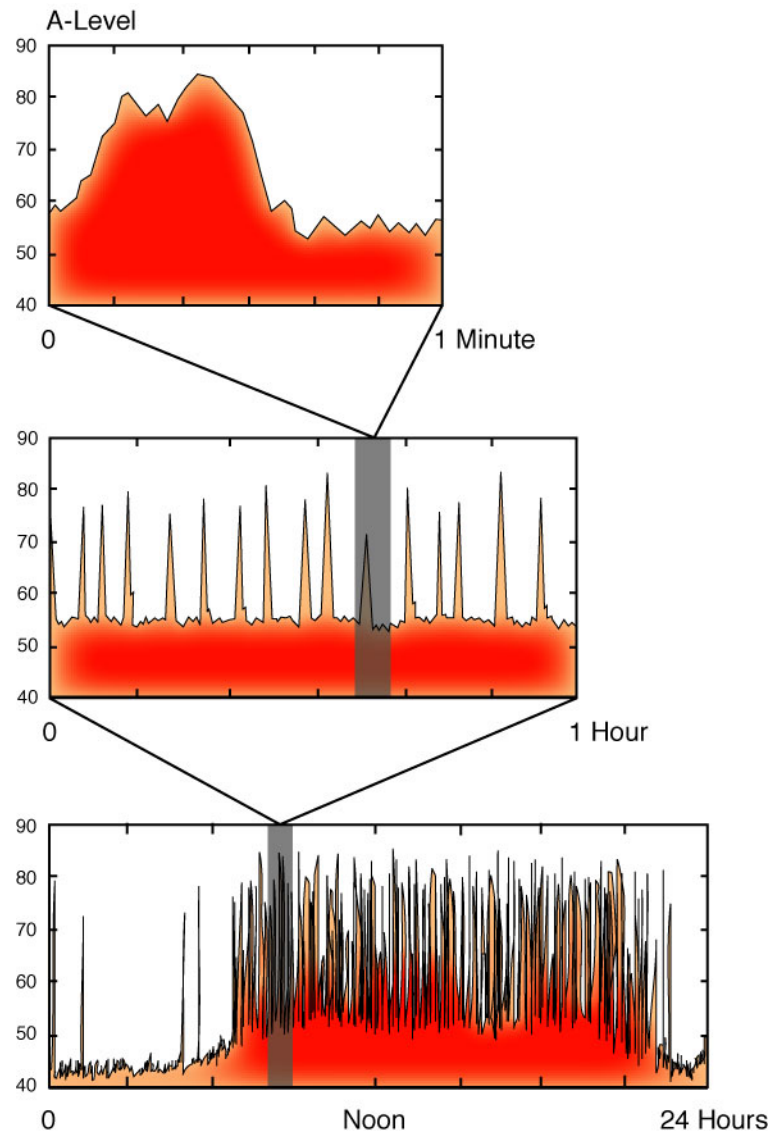


Figure A.5 A-weighted level fluctuations and noise dose

The center frame of Figure A.5 includes this one-minute interval within a full hour. Now the shaded area represents the noise dose during that hour when sixteen aircraft pass nearby, each producing a single event dose represented by an SEL. Similarly, the bottom frame includes the one-hour interval within a full 24 hours. Here the shaded area represents the noise dose over a complete day. Note that several overflights occur at night, when the background noise drops some 10 decibels, to approximately 45 dBA.

Values of DNL are normally measured with standard monitoring equipment or are predicted with computer models. Measurements are practical for obtaining DNL values for only relatively limited numbers of locations, and, in the absence of a permanently installed monitoring system, only for relatively short time periods. Thus, most airport noise studies utilize computer-generated estimates of

DNL, determined by accounting for all of the SEL from individual aircraft operations that comprise the total noise dose at a given location on the ground. This principle is used in all airport noise modeling.

Computed values of DNL are usually depicted as noise contours that are lines of equal exposure around an airport (much as topographic maps have contour lines of equal elevation). The contours usually reflect long-term (annual average) operating conditions, taking into account the average flights per day, how often each runway is used throughout the year, and where over the surrounding communities the aircraft normally fly.

Figure A.6 presents a representative sample of DNL (denoted L_{dn} in the figure) measured at various locations in the U.S.

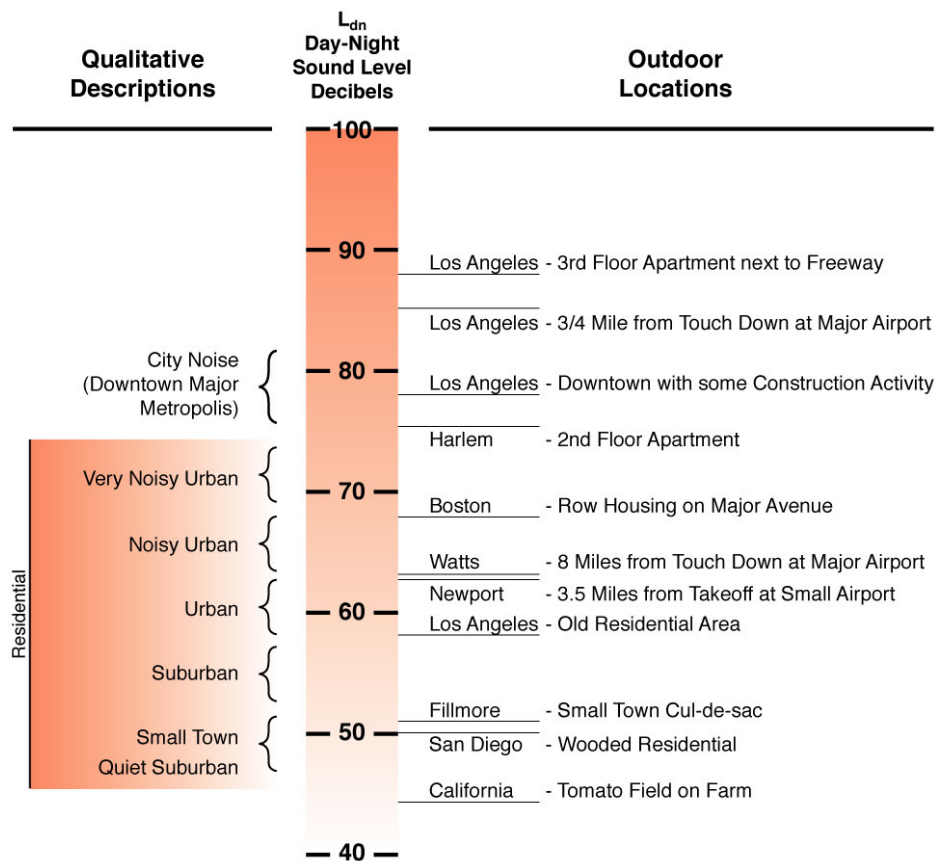


Figure A.6 Representative examples of Day-Night Average Sound Levels

Source: United States Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, p.14

ATTACHMENT B NOISE EMISSION LEVEL DATA

This attachment provides the noise emission level data used as input to the SoundPLAN model. All of the data are as one-third octave band sound pressure levels (dB) at a constant radius of 200 feet over pavement. In each case, tables provide the data in 10-degree increments around the aircraft with the aircraft's nose aligned with 0 degrees. In some cases, the data at particular angles were interpolated from other measurement data.

The tables provide data provide for the three categories of operations in Section 2.2.2 of this report:

- Taxiing and idling,
- Ground maintenance run-ups, and
- Cargo aircraft APUs.

For the first two categories, taxiing/idling and run-ups, the tables provide data for each of the five representative aircraft types described in Section 2.2.2.1. Taxiing and idling were assumed to occur at idle power with two engines operating (four for the B747). Ground maintenance run-ups were assumed to occur at takeoff power with all engines operating. For these operations, the noise emission levels were assumed to be symmetrical on either side of the aircraft; therefore the tables provide data from 0 degrees to 180 degrees only. Because most run-ups would occur with only one engine operating at high power, these assumptions provide a conservative evaluation of ground run-up noise.

For the third category, cargo aircraft APUs, the tables provide data only for the B767. The two most common cargo aircraft categories at ORD in all modeled cases are "heavy" and "jumbo" jets (as described in Section 2.2.2.1), represented in this evaluation by the B767 and B747, respectively. An evaluation of measured APU emission levels for these two aircraft gave similar results levels. Therefore, the B767 APU was chosen to represent all cargo aircraft APUs. The APU table provides emission levels for the full 360 degrees around the aircraft.

Taxi and Idle Data

Boeing 747		1/3 Octave Band Sound Pressure Level at 200 feet																	
1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
12.5	55.4	55.4	55.4	55.4	55.4	56.3	58.1	59.8	61.6	63.3	64.2	65.1	66.0	66.9	67.3	67.3	67.3	67.3	67.3
16	59.8	59.8	59.8	59.8	59.8	60.6	62.1	63.7	65.2	66.7	66.8	66.8	66.9	66.9	66.9	66.9	66.9	66.9	66.9
20	61.0	61.0	61.0	61.0	61.0	61.2	61.5	61.9	62.2	62.5	63.8	65.1	66.4	67.7	68.3	68.3	68.3	68.3	68.3
25	61.8	61.8	61.8	61.8	61.8	62.3	63.2	64.2	65.1	66.0	67.3	68.6	69.8	71.1	71.7	71.7	71.7	71.7	71.7
31	64.6	64.6	64.6	64.6	64.6	65.5	67.1	68.7	70.4	72.0	71.9	71.8	71.8	71.7	71.6	71.6	71.6	71.6	71.6
40	69.5	69.5	69.5	69.5	69.5	69.9	70.5	71.2	71.9	72.5	72.5	72.4	72.4	72.4	72.3	72.3	72.3	72.3	72.3
50	71.3	71.3	71.3	71.3	71.3	71.8	72.7	73.7	74.6	75.5	76.4	77.3	78.2	79.1	79.5	79.5	79.5	79.5	79.5
63	74.0	74.0	74.0	74.0	74.0	74.2	74.7	75.1	75.5	75.9	77.4	78.9	80.3	81.8	82.5	82.5	82.5	82.5	82.5
80	78.4	78.4	78.4	78.4	78.4	78.9	79.8	80.8	81.7	82.6	82.1	81.6	81.0	80.5	80.2	80.2	80.2	80.2	80.2
100	67.3	67.3	67.3	67.3	67.3	67.7	68.3	69.0	69.7	70.3	70.5	70.6	70.7	70.9	70.9	70.9	70.9	70.9	70.9
125	64.0	64.0	64.0	64.0	64.0	64.5	65.5	66.4	67.4	68.3	69.1	70.0	70.8	71.6	72.0	72.0	72.0	72.0	72.0
160	66.6	66.6	66.6	66.6	66.6	67.0	67.6	68.2	68.9	69.5	69.9	70.2	70.6	71.0	71.1	71.1	71.1	71.1	71.1
200	65.5	65.5	65.5	65.5	65.5	66.1	67.2	68.3	69.4	70.5	70.9	71.4	71.8	72.2	72.4	72.4	72.4	72.4	72.4
250	63.4	63.4	63.4	63.4	63.4	64.1	65.4	66.7	68.0	69.3	70.2	71.0	71.9	72.7	73.1	73.1	73.1	73.1	73.1
315	63.5	63.5	63.5	63.5	63.5	64.4	66.2	67.9	69.7	71.4	71.2	71.0	70.8	70.6	70.5	70.5	70.5	70.5	70.5
400	66.2	66.2	66.2	66.2	66.2	67.1	68.9	70.6	72.4	74.1	73.8	73.5	73.1	72.8	72.6	72.6	72.6	72.6	72.6
500	69.9	69.9	69.9	69.9	69.9	70.7	72.3	73.8	75.4	76.9	76.3	75.8	75.2	74.6	74.3	74.3	74.3	74.3	74.3
630	73.6	73.6	73.6	73.6	73.6	74.0	74.7	75.4	76.1	76.8	76.0	75.2	74.4	73.5	73.1	73.1	73.1	73.1	73.1
800	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.3	74.2	73.5	72.8	72.2	71.5	71.1	71.1	71.1	71.1	71.1
1000	75.5	75.5	75.5	75.5	75.5	75.3	74.8	74.2	73.7	73.2	72.8	72.3	71.8	71.4	71.1	71.1	71.1	71.1	71.1
1250	79.7	79.7	79.7	79.7	79.7	79.5	79.1	78.7	78.2	77.8	76.6	75.4	74.2	72.9	72.3	72.3	72.3	72.3	72.3
1600	79.7	79.7	79.7	79.7	79.7	79.6	79.3	79.0	78.7	78.4	77.4	76.4	75.4	74.3	73.8	73.8	73.8	73.8	73.8
2000	81.3	81.3	81.3	81.3	81.3	81.0	80.3	79.6	78.9	78.2	76.4	74.6	72.8	70.9	70.0	70.0	70.0	70.0	70.0
2500	76.1	76.1	76.1	76.1	76.1	76.4	76.9	77.4	77.9	78.4	76.8	75.2	73.6	72.0	71.2	71.2	71.2	71.2	71.2
3150	76.2	76.2	76.2	76.2	76.2	76.1	75.9	75.6	75.4	75.1	73.8	72.5	71.2	69.9	69.2	69.2	69.2	69.2	69.2
4000	78.0	78.0	78.0	78.0	78.0	78.0	78.1	78.1	78.1	78.1	76.6	75.1	73.6	72.1	71.3	71.3	71.3	71.3	71.3
5000	80.1	80.1	80.1	80.1	80.1	80.1	79.9	79.8	79.7	79.5	77.1	74.7	72.3	69.8	68.6	68.6	68.6	68.6	68.6
6300	70.7	70.7	70.7	70.7	70.7	71.1	71.9	72.7	73.4	74.2	72.3	70.3	68.4	66.4	65.4	65.4	65.4	65.4	65.4
8000	64.0	64.0	64.0	64.0	64.0	64.8	66.4	67.9	69.5	71.0	69.0	67.0	65.0	63.0	62.0	62.0	62.0	62.0	62.0
10000	55.9	55.9	55.9	55.9	55.9	57.1	59.4	61.6	63.9	66.2	63.8	61.5	59.1	56.7	55.5	55.5	55.5	55.5	55.5
12500	42.9	42.9	42.9	42.9	42.9	44.5	47.8	51.0	54.2	57.4	55.1	52.8	50.4	48.1	46.9	46.9	46.9	46.9	46.9

Boeing 767		1/3 Octave Band Sound Pressure Level at 200 feet																	
1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
12.5	53.4	53.4	53.4	53.4	53.4	54.3	56.1	57.8	59.6	61.3	62.2	63.1	64.0	64.9	65.3	65.3	65.3	65.3	65.3
16	57.8	57.8	57.8	57.8	57.8	58.6	60.1	61.7	63.2	64.7	64.8	64.8	64.9	64.9	64.9	64.9	64.9	64.9	64.9
20	59.0	59.0	59.0	59.0	59.0	59.2	59.5	59.9	60.2	60.5	61.8	63.1	64.4	65.7	66.3	66.3	66.3	66.3	66.3
25	59.8	59.8	59.8	59.8	59.8	60.3	61.2	62.2	63.1	64.0	65.3	66.6	67.8	69.1	69.7	69.7	69.7	69.7	69.7
31	62.6	62.6	62.6	62.6	62.6	63.5	65.1	66.7	68.4	70.0	69.9	69.8	69.8	69.7	69.6	69.6	69.6	69.6	69.6
40	67.5	67.5	67.5	67.5	67.5	67.9	68.5	69.2	69.9	70.5	70.5	70.4	70.4	70.4	70.3	70.3	70.3	70.3	70.3
50	69.3	69.3	69.3	69.3	69.3	69.8	70.7	71.7	72.6	73.5	74.4	75.3	76.2	77.1	77.5	77.5	77.5	77.5	77.5
63	72.0	72.0	72.0	72.0	72.0	72.2	72.7	73.1	73.5	73.9	75.4	76.9	78.3	79.8	80.5	80.5	80.5	80.5	80.5
80	76.4	76.4	76.4	76.4	76.4	76.9	77.8	78.8	79.7	80.6	80.1	79.6	79.0	78.5	78.2	78.2	78.2	78.2	78.2
100	65.3	65.3	65.3	65.3	65.3	65.7	66.3	67.0	67.7	68.3	68.5	68.6	68.7	68.9	68.9	68.9	68.9	68.9	68.9
125	62.0	62.0	62.0	62.0	62.0	62.5	63.5	64.4	65.4	66.3	67.1	68.0	68.8	69.6	70.0	70.0	70.0	70.0	70.0
160	64.6	64.6	64.6	64.6	64.6	65.0	65.6	66.2	66.9	67.5	67.9	68.2	68.6	69.0	69.1	69.1	69.1	69.1	69.1
200	63.5	63.5	63.5	63.5	63.5	64.1	65.2	66.3	67.4	68.5	68.9	69.4	69.8	70.2	70.4	70.4	70.4	70.4	70.4
250	61.4	61.4	61.4	61.4	61.4	62.1	63.4	64.7	66.0	67.3	68.2	69.0	69.9	70.7	71.1	71.1	71.1	71.1	71.1
315	61.5	61.5	61.5	61.5	61.5	62.4	64.2	65.9	67.7	69.4	69.2	69.0	68.8	68.6	68.5	68.5	68.5	68.5	68.5
400	64.2	64.2	64.2	64.2	64.2	65.1	66.9	68.6	70.4	72.1	71.8	71.5	71.1	70.8	70.6	70.6	70.6	70.6	70.6
500	67.9	67.9	67.9	67.9	67.9	68.7	70.3	71.8	73.4	74.9	74.3	73.8	73.2	72.6	72.3	72.3	72.3	72.3	72.3
630	71.6	71.6	71.6	71.6	71.6	72.0	72.7	73.4	74.1	74.8	74.0	73.2	72.4	71.5	71.1	71.1	71.1	71.1	71.1
800	72.5	72.5	72.5	72.5	72.5	72.5	72.4	72.4	72.3	72.2	71.5	70.8	70.2	69.5	69.1	69.1	69.1	69.1	69.1
1000	73.5	73.5	73.5	73.5	73.5	73.3	72.8	72.2	71.7	71.2	70.8	70.3	69.8	69.4	69.1	69.1	69.1	69.1	69.1
1250	77.7	77.7	77.7	77.7	77.7	77.5	77.1	76.7	76.2	75.8	74.6	73.4	72.2	70.9	70.3	70.3	70.3	70.3	70.3
1600	77.7	77.7	77.7	77.7	77.7	77.6	77.3	77.0	76.7	76.4	75.4	74.4	73.4	72.3	71.8	71.8	71.8	71.8	71.8
2000	79.3	79.3	79.3	79.3	79.3	79.0	78.3	77.6	76.9	76.2	74.4	72.6	70.8	68.9	68.0	68.0	68.0	68.0	68.0
2500	74.1	74.1	74.1	74.1	74.1	74.4	74.9	75.4	75.9	76.4	74.8	73.2	71.6	70.0	69.2	69.2	69.2	69.2	69.2
3150	74.2	74.2	74.2	74.2	74.2	74.1	73.9	73.6	73.4	73.1	71.8	70.5	69.2	67.9	67.2	67.2	67.2	67.2	67.2
4000	76.0	76.0	76.0	76.0	76.0	76.0	76.1	76.1	76.1	76.1	74.6	73.1	71.6	70.1	69.3	69.3	69.3	69.3	69.3
5000	78.1	78.1	78.1	78.1	78.1	78.1	77.9	77.8	77.7	77.5	75.1	72.7	70.3	67.8	66.6	66.6	66.6	66.6	66.6
6300	68.7	68.7	68.7	68.7	68.7	69.1	69.9	70.7	71.4	72.2	70.3	68.3	66.4	64.4	63.4	63.4	63.4	63.4	63.4
8000	62.0	62.0	62.0	62.0	62.0	62.8	64.4	65.9	67.5	69.0	67.0	65.0	63.0	61.0	60.0	60.0	60.0	60.0	60.0
10000	53.9	53.9	53.9	53.9	53.9	55.1	57.4	59.6	61.9	64.2	61.8	59.5	57.1	54.7	53.5	53.5	53.5	53.5	53.5
12500	40.9	40.9	40.9	40.9	40.9	42.5	45.8	49.0	52.2	55.4	53.1	50.8	48.4	46.1	44.9	44.9	44.9	44.9	44.9

Taxi and Idle Data (continued)

Boeing 737300		1/3 Octave Band Sound Pressure Level at 200 feet																		
1/3 Octave Band (Hz)	Angle (degrees)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
50	69.3	69.3	69.3	64.0	66.7	68.3	68.7	69.0	69.5	70.1	71.3	72.2	72.9	73.6	73.9	73.8	73.0	73.0	73.0	
63	70.2	70.2	70.2	73.8	72.3	71.3	70.8	71.8	72.3	72.4	73.1	76.1	81.4	78.7	76.8	75.9	74.0	74.0	74.0	
80	73.6	73.6	73.6	78.6	76.4	74.8	73.9	74.6	75.3	75.9	77.2	78.9	81.0	79.6	79.4	80.4	76.2	76.2	76.2	
100	74.7	74.7	74.7	77.3	72.9	71.7	73.8	75.1	76.2	77.1	78.0	79.6	81.9	80.6	80.5	81.5	79.9	79.9	79.9	
125	75.5	75.5	75.5	75.1	76.3	76.3	75.1	75.3	75.6	76.0	78.8	80.9	82.3	81.5	80.6	79.7	80.8	80.8	80.8	
160	73.4	73.4	73.4	77.6	79.3	78.9	76.5	76.4	76.0	75.5	80.0	80.7	77.6	80.3	81.4	80.9	77.9	77.9	77.9	
200	72.4	72.4	72.4	76.3	74.5	73.6	73.7	73.6	74.2	75.5	76.4	77.6	78.9	79.4	79.7	79.8	75.6	75.6	75.6	
250	74.9	74.9	74.9	78.3	76.4	75.8	76.5	75.9	75.8	76.2	76.7	78.3	81.0	82.9	82.5	79.8	78.2	78.2	78.2	
315	76.6	76.6	76.6	80.2	78.6	78.0	78.3	77.5	78.0	79.9	80.4	81.4	82.9	84.0	83.9	82.4	80.8	80.8	80.8	
400	75.6	75.6	75.6	80.1	79.0	78.0	76.9	77.2	77.5	77.9	78.4	79.7	81.9	81.6	79.9	77.0	78.0	78.0	78.0	
500	75.2	75.2	75.2	79.1	78.6	77.7	76.2	76.0	76.1	76.4	77.5	78.5	79.3	79.5	78.7	77.0	76.4	76.4	76.4	
630	76.9	76.9	76.9	81.5	79.1	77.3	76.1	76.0	76.3	77.0	78.5	80.0	81.5	82.2	80.9	77.8	75.1	75.1	75.1	
800	76.9	76.9	76.9	80.6	77.8	75.7	74.3	73.9	74.5	76.0	77.5	79.6	82.3	81.9	80.0	76.6	73.8	73.8	73.8	
1000	78.9	78.9	78.9	79.3	75.2	72.5	71.2	71.1	71.5	72.4	73.9	77.4	82.8	80.0	77.3	74.7	72.2	72.2	72.2	
1250	77.5	77.5	77.5	76.6	73.4	71.4	70.6	70.5	70.3	70.0	71.6	75.4	81.4	78.1	75.3	73.1	70.9	70.9	70.9	
1600	77.1	77.1	77.1	77.4	73.9	71.3	69.7	69.9	69.6	68.9	70.7	74.2	79.3	77.3	74.9	72.2	70.0	70.0	70.0	
2000	61.0	61.0	61.0	81.0	76.9	73.6	71.1	70.9	70.4	69.6	71.9	75.0	78.7	77.0	74.8	72.2	69.8	69.8	69.8	
2500	64.9	64.9	64.9	85.9	80.7	76.6	73.5	72.1	71.1	70.6	73.5	76.6	79.9	77.5	74.9	72.2	69.7	69.7	69.7	
3150	83.6	83.6	83.6	85.0	81.1	77.2	73.4	71.0	70.1	70.6	73.7	76.4	78.9	77.8	75.4	71.9	69.7	69.7	69.7	
4000	79.6	79.6	79.6	81.3	79.0	76.2	72.9	70.6	69.4	69.2	71.7	74.4	77.3	75.8	74.3	72.7	69.8	69.8	69.8	
5000	78.9	78.9	78.9	79.9	79.4	77.2	73.3	71.0	68.9	67.0	72.0	76.0	79.1	77.1	75.4	74.0	67.0	67.0	67.0	
6300	76.5	76.5	76.5	78.5	78.5	75.9	70.6	68.4	67.5	67.9	70.9	74.4	78.5	76.5	74.5	72.5	67.8	67.8	67.8	
8000	74.3	74.3	74.3	76.2	77.7	75.1	68.6	68.5	68.6	68.8	72.3	76.1	80.1	79.5	77.3	73.6	70.7	70.7	70.7	
10000	75.7	75.7	75.7	78.8	78.2	77.4	76.4	77.3	72.2	60.9	77.1	87.2	91.2	88.5	84.9	80.2	76.8	76.8	76.8	

Canadair Regional Jet		1/3 Octave Band Sound Pressure Level at 200 feet																	
1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
12.5	59.5	59.4	59.2	58.9	58.6	59.3	61.1	62.2	61.3	60.5	61.0	61.6	61.2	60.5	60.1	60.0	62.1	70.8	79.6
16	63.0	62.1	61.1	60.6	60.3	60.7	61.8	62.5	61.9	61.2	62.1	63.1	62.4	61.2	60.9	61.4	63.4	69.9	76.4
20	63.9	62.3	60.6	60.1	60.0	60.5	61.5	62.5	63.5	64.5	64.1	63.8	62.8	61.5	61.0	61.2	62.6	67.5	72.4
25	65.4	66.1	66.7	65.2	62.9	62.0	62.3	62.9	64.7	66.5	65.3	64.1	63.9	64.0	63.9	63.7	64.5	68.0	71.6
31	66.5	67.0	67.5	66.7	65.5	64.9	64.9	65.1	65.7	66.3	67.4	68.4	67.3	65.4	64.6	65.1	66.2	69.4	72.6
40	69.6	68.4	67.1	66.7	66.5	67.0	68.1	69.0	69.1	69.2	69.6	70.1	69.2	67.9	67.2	67.0	67.5	70.4	73.3
50	71.4	70.7	70.0	68.9	67.8	67.1	67.0	67.3	69.0	70.6	70.4	70.2	69.8	69.3	69.1	69.2	69.8	71.7	73.7
63	72.7	71.8	70.9	70.1	69.4	69.0	68.9	69.3	71.0	72.6	72.0	71.4	71.1	70.8	70.9	71.5	72.1	72.7	73.3
80	72.7	72.6	72.5	72.1	71.6	71.9	73.0	74.2	75.2	76.2	75.7	75.1	74.4	73.7	73.5	73.8	74.0	73.7	73.3
100	72.3	73.4	74.5	75.7	76.9	77.6	77.7	77.7	77.4	77.0	77.5	78.1	77.8	77.3	76.9	76.5	75.8	74.1	72.4
125	73.6	75.4	77.2	78.1	78.6	78.6	77.9	77.4	77.2	77.0	77.3	77.5	77.5	77.3	76.4	74.9	73.4	72.0	70.7
160	73.1	75.1	77.1	77.5	77.4	76.9	76.0	75.4	75.9	76.3	76.3	76.3	75.1	73.5	72.3	71.5	70.8	70.4	70.0
200	72.0	73.5	74.9	74.5	73.4	73.3	74.2	74.9	75.0	75.0	75.8	76.7	75.1	72.6	71.7	72.4	72.4	70.3	68.2
250	70.7	71.0	71.3	71.8	72.3	72.6	72.6	72.8	73.8	74.7	74.6	74.5	73.2	71.5	71.3	72.5	73.0	71.2	69.5
315	74.9	76.1	77.3	77.0	76.1	76.4	77.7	78.9	79.8	80.6	80.2	79.7	79.1	78.4	77.9	77.6	76.6	73.9	71.2
400	72.6	75.3	77.9	77.0	74.9	74.6	76.3	77.5	77.3	77.2	77.3	77.5	76.8	75.9	75.6	75.8	75.4	73.5	71.6
500	70.3	71.1	72.0	71.0	69.4	69.6	71.5	72.7	72.1	71.4	71.5	71.7	70.5	68.8	68.5	69.5	69.9	68.8	67.7
630	66.9	67.9	68.9	69.6	70.1	71.2	72.7	73.7	73.1	72.5	71.2	69.9	69.9	70.3	70.6	70.9	70.8	69.4	68.1
800	69.2	69.2	69.3	69.7	70.3	71.4	73.1	74.2	73.3	72.5	71.0	69.6	68.9	68.4	69.1	70.9	71.7	69.5	67.2
1000	72.8	73.0	73.2	71.6	69.5	67.7	66.3	65.5	66.4	67.3	66.5	65.8	65.3	64.9	65.7	67.6	68.7	67.3	65.9
1250	74.7	76.2	77.7	76.1	73.4	70.8	68.5	66.5	65.7	64.9	64.9	65.0	66.1	67.6	68.4	68.3	67.9	66.5	65.1
1600	77.1	79.0	80.9	80.0	78.2	76.0	73.3	70.8	68.6	66.4	67.1	67.7	68.9	70.2	70.5	69.9	68.9	66.7	64.5
2000	74.3	76.4	78.5	77.8	76.3	74.4	72.1	70.0	68.4	66.8	67.6	68.5	69.4	70.4	70.9	70.9	70.2	67.3	64.5
2500	76.5	74.6	72.8	71.3	69.9	68.4	66.8	65.8	66.4	67.0	66.0	65.0	64.4	64.1	64.5	65.8	66.3	64.1	62.0
3150	74.0	73.9	73.8	73.4	72.9	71.3	68.6	66.5	66.2	65.9	65.1	64.3	64.6	65.2	65.4	65.3	64.8	63.0	61.2
4000	74.3	74.1	73.9	74.1	74.5	73.5	71.0	68.8	67.0	65.3	65.7	66.1	66.8	67.6	67.5	66.5	65.1	62.5	59.9
5000	75.7	76.7	77.7	77.7	77.4	75.5	72.0	69.0	67.8	66.6	67.5	68.4	69.0	69.5	69.5	68.9	67.6	64.5	61.4
6300	73.9	74.2	74.4	73.9	73.0	71.8	70.3	68.6	66.8	65.0	66.5	67.9	68.9	69.7	69.5	68.3	66.6	63.2	59.9
8000	70.7	69.5	68.4	68.4	68.8	67.7	65.1	63.0	62.1	61.3	62.5	63.6	65.0	66.5	66.4	64.6	62.3	58.8	55.2
10000	66.1	65.4	64.8	64.7	64.9	63.9	61.7	60.0	59.5	59.1	60.2	61.3	62.6	63.9	63.4	61.2	58.7	55.2	51.6
12500	60.5	59.9	59.3	59.4	59.6	58.6	56.3	54.5	53.9	53.4	54.8	56.2	57.0	57.7	56.9	54.5	51.7	47.6	43.5
16000	56.7	56.0	55.4	55.1	54.9	53.4	50.7	48.4	47.1	45.9	47.5	49.1	50.5	51.8	51.2	48.7	45.9	41.9	37.9
20000	48.1	47.6	47.1	47.2	47.4	46.3	43.8	41.7	40.5	39.3	41.7	44.2	45.3	46.0	44.8	41.7	38.3	34.4	30.4

Taxi and Idle Data (continued)

Beech 1900 1/3 Octave Band Sound Pressure Level at 200 feet																			
1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
10	86.4	87.2	87.9	85.0	84.1	78.7	75.7	76.0	70.5	77.5	67.8	70.1	72.9	73.8	80.9	77.1	83.4	78.4	73.4
12.5	86.8	87.6	88.3	85.4	84.5	79.1	76.1	76.4	70.9	77.9	68.2	70.5	73.3	74.2	81.3	77.6	83.8	78.8	73.8
16	87.4	88.6	89.9	84.6	83.2	77.2	74.4	74.6	69.4	75.1	67.1	69.2	71.4	72.6	79.7	75.5	82.3	77.3	72.3
20	87.2	88.2	90.0	83.7	82.4	76.4	73.5	74.0	68.9	73.9	66.6	68.9	70.6	72.0	78.9	74.8	81.6	76.6	71.6
25	85.5	85.5	88.4	80.8	80.4	75.2	72.2	73.2	68.1	72.7	65.5	68.6	70.0	71.0	77.5	74.1	80.2	75.2	70.2
31	83.5	83.6	86.4	78.0	80.0	74.4	71.5	72.7	68.5	72.4	66.9	68.6	70.6	71.3	77.1	73.9	79.1	74.1	69.1
40	81.2	82.0	84.8	76.4	79.3	74.3	71.2	72.4	70.3	72.5	69.8	70.4	71.3	74.1	76.7	73.6	78.2	73.2	68.2
50	78.4	80.4	84.7	75.1	76.3	73.5	71.5	72.0	70.7	73.3	71.6	72.5	71.8	72.8	76.3	73.3	77.8	72.8	67.8
63	77.2	79.1	83.6	76.7	78.9	78.1	76.1	75.3	75.0	77.2	75.3	75.9	76.0	76.3	78.8	74.5	77.7	72.7	67.7
80	82.2	82.0	83.7	78.5	81.3	79.3	77.9	77.2	76.5	80.8	79.3	79.2	79.8	80.4	79.4	78.2	79.4	74.4	69.4
100	76.4	77.4	78.9	73.8	75.2	72.1	71.9	71.2	70.2	71.1	70.7	71.7	73.1	72.6	75.4	73.0	76.1	71.1	66.1
125	79.4	80.6	81.7	77.7	78.1	76.8	74.3	73.4	72.4	72.2	71.8	72.8	74.3	76.2	76.2	73.8	75.1	70.1	65.1
160	87.7	86.4	85.4	82.7	81.7	79.4	75.7	73.9	74.3	75.3	76.1	76.0	75.2	76.9	80.9	78.7	74.3	69.3	64.3
200	82.9	83.6	84.3	79.9	75.6	73.8	72.2	71.2	71.3	71.2	71.1	72.7	74.4	74.8	76.4	76.3	72.0	67.0	62.0
250	86.2	85.8	85.7	88.3	77.6	73.6	72.7	69.9	69.7	69.2	69.6	71.6	74.1	73.9	78.8	77.4	69.1	64.1	59.1
315	85.1	85.4	86.6	87.5	77.0	73.3	72.7	72.4	73.1	71.2	72.4	72.7	74.8	75.7	76.4	76.0	67.7	62.7	57.7
400	84.2	83.6	84.0	82.0	75.3	70.5	70.7	69.0	68.2	68.7	68.1	68.8	70.6	70.2	73.2	74.7	63.9	58.9	53.9
500	84.3	83.5	82.4	83.0	75.5	70.8	70.5	69.5	69.3	69.0	69.9	69.1	69.5	69.5	73.8	73.0	61.6	56.6	51.6
630	80.3	80.1	79.9	79.2	72.8	71.1	69.9	69.5	70.1	69.5	70.5	70.9	68.6	69.1	72.3	70.5	60.5	55.5	50.5
800	77.1	77.9	76.3	76.5	72.4	70.4	68.9	68.6	69.8	69.3	68.8	69.3	68.5	67.6	69.8	66.8	56.4	51.4	46.4
1000	74.9	75.4	73.8	75.0	70.7	68.6	68.2	66.6	66.9	66.3	66.9	68.3	67.0	66.6	68.2	64.2	54.0	49.0	44.0
1250	71.5	73.3	72.0	71.9	68.8	67.0	67.2	64.7	64.3	63.4	65.4	65.9	65.3	64.3	66.4	63.0	52.5	47.5	42.5
1600	70.3	71.4	70.5	69.7	67.7	66.3	67.6	65.4	64.6	64.1	66.1	65.2	65.2	63.9	64.4	61.4	50.1	45.1	40.1
2000	67.6	69.4	69.8	67.6	66.5	69.2	71.8	65.9	67.8	68.3	69.4	64.7	65.7	62.6	64.0	59.5	47.5	42.5	37.5
2500	68.9	70.4	69.0	67.4	65.6	65.9	67.2	65.3	62.0	62.1	59.5	58.5	60.0	59.0	59.5	57.1	44.8	39.8	34.8
3150	71.0	71.1	70.1	68.5	66.8	67.3	69.4	67.1	63.4	62.5	61.3	58.4	61.7	60.5	60.8	57.7	46.6	41.6	36.6
4000	69.6	70.1	69.6	66.4	64.7	65.1	66.4	65.1	61.2	60.6	62.9	60.7	62.0	60.6	60.4	56.5	43.8	38.8	33.8
5000	71.0	71.3	70.6	68.7	66.0	65.8	66.1	65.2	62.0	61.5	59.8	59.1	60.0	57.6	56.1	53.9	40.1	35.1	30.1
6300	70.5	71.1	70.1	68.0	66.0	64.8	65.0	63.4	60.8	60.0	58.0	56.4	59.0	56.7	55.6	52.8	39.9	34.9	29.9
8000	68.7	70.4	69.2	66.9	64.6	64.0	64.0	62.3	59.8	59.4	57.8	56.9	58.2	55.4	55.2	52.0	39.2	34.2	29.2
10000	65.7	67.2	66.1	63.9	61.7	60.7	60.9	58.9	56.4	56.2	53.7	52.4	54.5	52.5	52.1	49.2	38.3	33.3	28.3

Ground Run-up Data

Boeing 747400 1/3 Octave Band Sound Pressure Level at 200 feet

1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
50	115.3	115.5	115.7	115.8	116.1	116.3	116.4	116.6	116.8	117.0	117.6	118.9	120.7	122.8	124.6	123.4	114.0	100.1	85.2
63	115.4	115.6	115.8	115.9	116.2	116.4	116.5	116.7	116.9	117.1	117.7	119.0	120.8	122.9	124.7	123.5	114.1	100.2	85.3
80	118.1	118.3	118.5	118.6	118.9	119.1	119.2	119.4	119.6	119.8	120.4	121.7	123.5	125.6	127.4	126.2	116.8	102.9	88.0
100	119.7	119.9	120.1	120.2	120.5	120.7	120.8	121.0	121.2	121.4	122.0	123.3	125.1	127.2	129.0	127.8	118.4	104.5	89.6
125	118.6	118.8	119.0	119.1	119.4	119.6	119.7	119.9	120.1	120.3	120.9	122.2	124.0	126.1	127.9	126.7	117.3	103.4	88.5
160	114.2	114.4	114.6	114.7	115.0	115.2	115.3	115.5	115.7	115.9	116.5	117.8	119.6	121.7	123.5	122.3	112.9	99.0	84.1
200	111.5	111.7	111.9	112.0	112.3	112.5	112.6	112.8	113.0	113.2	113.8	115.1	116.9	119.0	120.8	119.6	110.2	96.3	81.4
250	109.5	109.7	109.9	110.0	110.3	110.5	110.6	110.8	111.0	111.2	111.8	113.1	114.9	117.0	118.8	117.6	108.2	94.3	79.4
315	107.1	107.3	107.5	107.6	107.9	108.1	108.2	108.4	108.6	108.8	109.4	110.7	112.5	114.6	116.4	115.2	105.8	91.9	77.0
400	104.9	105.1	105.3	105.4	105.7	105.9	106.0	106.2	106.4	106.6	107.2	108.5	110.3	112.4	114.2	113.0	103.6	89.7	74.8
500	102.9	103.1	103.3	103.4	103.7	103.9	104.0	104.2	104.4	104.6	105.2	106.5	108.3	110.4	112.2	111.0	101.6	87.7	72.8
630	100.7	100.9	101.1	101.2	101.5	101.7	101.8	102.0	102.2	102.4	103.0	104.3	106.1	108.2	110.0	108.8	99.4	85.5	70.6
800	99.0	99.2	99.4	99.5	99.8	100.0	100.1	100.3	100.5	100.7	101.3	102.6	104.4	106.5	108.3	107.1	97.7	83.8	68.9
1000	96.5	96.7	96.9	97.0	97.3	97.5	97.6	97.8	98.0	98.2	98.8	100.1	101.9	104.0	105.8	104.6	95.2	81.3	66.4
1250	95.0	95.2	95.4	95.5	95.8	96.0	96.1	96.3	96.5	96.7	97.3	98.6	100.4	102.5	104.3	103.1	93.7	79.8	64.9
1600	94.9	95.1	95.3	95.4	95.7	95.9	96.0	96.2	96.4	96.6	97.2	98.5	100.3	102.4	104.2	103.0	93.6	79.7	64.8
2000	94.9	95.1	95.3	95.4	95.7	95.9	96.0	96.2	96.4	96.6	97.2	98.5	100.3	102.4	104.2	103.0	93.6	79.7	64.8
2500	98.8	99.0	99.2	99.3	99.6	99.8	99.9	100.1	100.3	100.5	101.1	102.4	104.2	106.3	108.1	106.9	97.5	83.6	68.7
3150	93.0	93.2	93.4	93.5	93.8	94.0	94.1	94.3	94.5	94.7	95.3	96.6	98.4	100.5	102.3	101.1	91.7	77.8	62.9
4000	88.6	88.8	89.0	89.1	89.4	89.6	89.7	89.9	90.1	90.3	90.9	92.2	94.0	96.1	97.9	96.7	87.3	73.4	58.5
5000	84.3	84.5	84.7	84.8	85.1	85.3	85.4	85.6	85.8	86.0	86.6	87.9	89.7	91.8	93.6	92.4	83.0	69.1	54.2
6300	78.1	78.3	78.5	78.6	78.9	79.1	79.2	79.4	79.6	79.8	80.4	81.7	83.5	85.6	87.4	86.2	76.8	62.9	48.0
8000	71.8	72.0	72.2	72.3	72.6	72.8	72.9	73.1	73.3	73.5	74.1	75.4	77.2	79.3	81.1	79.9	70.5	56.6	41.7
10000	63.7	63.9	64.1	64.2	64.5	64.7	64.8	65.0	65.2	65.4	66.0	67.3	69.1	71.2	73.0	71.8	62.4	48.5	33.6

Boeing 767300 1/3 Octave Band Sound Pressure Level at 200 feet

1/3 Octave Band (Hz)	Angle (degrees)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
50	111.4	111.6	111.8	111.9	112.2	112.4	112.5	112.7	112.9	113.1	113.7	115.0	116.8	118.9	120.7	119.5	110.1	96.2	81.3
63	116.8	117.0	117.2	117.3	117.6	117.8	117.9	118.1	118.3	118.5	119.1	120.4	122.2	124.3	126.1	124.9	115.5	101.6	86.7
80	117.1	117.3	117.5	117.6	117.9	118.1	118.2	118.4	118.6	118.8	119.4	120.7	122.5	124.6	126.4	125.2	115.8	101.9	87.0
100	116.4	116.6	116.8	116.9	117.2	117.4	117.5	117.7	117.9	118.1	118.7	120.0	121.8	123.9	125.7	124.5	115.1	101.2	86.3
125	117.2	117.4	117.6	117.7	118.0	118.2	118.3	118.5	118.7	118.9	119.5	120.8	122.6	124.7	126.5	125.3	115.9	102.0	87.1
160	110.9	111.1	111.3	111.4	111.7	111.9	112.0	112.2	112.4	112.6	113.2	114.5	116.3	118.4	120.2	119.0	109.6	95.7	80.8
200	109.9	110.1	110.3	110.4	110.7	110.9	111.0	111.2	111.4	111.6	112.2	113.5	115.3	117.4	119.2	118.0	108.6	94.7	79.8
250	110.1	110.3	110.5	110.6	110.9	111.1	111.2	111.4	111.6	111.8	112.4	113.7	115.5	117.6	119.4	118.2	108.8	94.9	80.0
315	106.4	106.6	106.8	106.9	107.2	107.4	107.5	107.7	107.9	108.1	108.7	110.0	111.8	113.9	115.7	114.5	105.1	91.2	76.3
400	101.5	101.7	101.9	102.0	102.3	102.5	102.6	102.8	103.0	103.2	103.8	105.1	106.9	109.0	110.8	109.6	100.2	86.3	71.4
500	99.9	100.1	100.3	100.4	100.7	100.9	101.0	101.2	101.4	101.6	102.2	103.5	105.3	107.4	109.2	108.0	98.6	84.7	69.8
630	97.6	97.8	98.0	98.1	98.4	98.6	98.7	98.9	99.1	99.3	99.9	101.2	103.0	105.1	106.9	105.7	96.3	82.4	67.5
800	95.5	95.7	95.9	96.0	96.3	96.5	96.6	96.8	97.0	97.2	97.8	99.1	100.9	103.0	104.8	103.6	94.2	80.3	65.4
1000	94.5	94.7	94.9	95.0	95.3	95.5	95.6	95.8	96.0	96.2	96.8	98.1	99.9	102.0	103.8	102.6	93.2	79.3	64.4
1250	93.5	93.7	93.9	94.0	94.3	94.5	94.6	94.8	95.0	95.2	95.8	97.1	98.9	101.0	102.8	101.6	92.2	78.3	63.4
1600	94.6	94.8	95.0	95.1	95.4	95.6	95.7	95.9	96.1	96.3	96.9	98.2	100.0	102.1	103.9	102.7	93.3	79.4	64.5
2000	93.9	94.1	94.3	94.4	94.7	94.9	95.0	95.2	95.4	95.6	96.2	97.5	99.3	101.4	103.2	102.0	92.6	78.7	63.8
2500	90.3	90.5	90.7	90.8	91.1	91.3	91.4	91.6	91.8	92.0	92.6	93.9	95.7	97.8	99.6	98.4	89.0	75.1	60.2
3150	86.7	86.9	87.1	87.2	87.5	87.7	87.8	88.0	88.2	88.4	89.0	90.3	92.1	94.2	96.0	94.8	85.4	71.5	56.6
4000	87.0	87.2	87.4	87.5	87.8	88.0	88.1	88.3	88.5	88.7	89.3	90.6	92.4	94.5	96.3	95.1	85.7	71.8	56.9
5000	82.2	82.4	82.6	82.7	83.0	83.2	83.3	83.5	83.7	83.9	84.5	85.8	87.6	89.7	91.5	90.3	80.9	67.0	52.1
6300	76.1	76.3	76.5	76.6	76.9	77.1	77.2	77.4	77.6	77.8	78.4	79.7	81.5	83.6	85.4	84.2	74.8	60.9	46.0
8000	67.9	68.1	68.3	68.4	68.7	68.9	69.0	69.2	69.4	69.6	70.2	71.5	73.3	75.4	77.2	76.0	66.6	52.7	37.8
10000	64.7	64.9	65.1	65.2	65.5	65.7	65.8	66.0	66.2	66.4	67.0	68.3	70.1	72.2	74.0	72.8	63.4	49.5	34.6

Ground Run-up Data (continued)

Boeing 737800		1/3 Octave Band Sound Pressure Level at 200 feet																		
1/3 Octave Band (Hz)		Angle (degrees)																		
		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
50		114.4	114.6	114.7	114.9	115.1	115.4	115.5	115.7	115.9	116.0	116.7	117.9	119.8	121.9	123.7	122.5	113.0	99.2	84.3
63		109.4	109.6	109.7	109.9	110.1	110.4	110.5	110.7	110.9	111.0	111.7	112.9	114.8	116.9	118.7	117.5	108.0	94.2	79.3
80		110.9	111.1	111.2	111.4	111.6	111.9	112.0	112.2	112.4	112.5	113.2	114.4	116.3	118.4	120.2	119.0	109.5	95.7	80.8
100		113.7	113.9	114.0	114.2	114.4	114.7	114.8	115.0	115.2	115.3	116.0	117.2	119.1	121.2	123.0	121.8	112.3	98.5	83.6
125		114.4	114.6	114.7	114.9	115.1	115.4	115.5	115.7	115.9	116.0	116.7	117.9	119.8	121.9	123.7	122.5	113.0	99.2	84.3
160		114.0	114.2	114.3	114.5	114.7	115.0	115.1	115.3	115.5	115.6	116.3	117.5	119.4	121.5	123.3	122.1	112.6	98.8	83.9
200		104.8	105.0	105.1	105.3	105.5	105.8	105.9	106.1	106.3	106.4	107.1	108.3	110.2	112.3	114.1	112.9	103.4	89.6	74.7
250		107.6	107.8	107.9	108.1	108.3	108.6	108.7	108.9	109.1	109.2	109.9	111.1	113.0	115.1	116.9	115.7	106.2	92.4	77.5
315		107.3	107.5	107.6	107.8	108.0	108.3	108.4	108.6	108.8	108.9	109.6	110.8	112.7	114.8	116.6	115.4	105.9	92.1	77.2
400		105.8	106.0	106.1	106.3	106.5	106.8	106.9	107.1	107.3	107.4	108.1	109.3	111.2	113.3	115.1	113.9	104.4	90.6	75.7
500		101.4	101.6	101.7	101.9	102.1	102.4	102.5	102.7	102.9	103.0	103.7	104.9	106.8	108.9	110.7	109.5	100.0	86.2	71.3
630		99.2	99.4	99.5	99.7	99.9	100.2	100.3	100.5	100.7	100.8	101.5	102.7	104.6	106.7	108.5	107.3	97.8	84.0	69.1
800		98.6	98.8	98.9	99.1	99.3	99.6	99.7	99.9	100.1	100.2	100.9	102.1	104.0	106.1	107.9	106.7	97.2	83.4	68.5
1000		96.9	97.1	97.2	97.4	97.6	97.9	98.0	98.2	98.4	98.5	99.2	100.4	102.3	104.4	106.2	105.0	95.5	81.7	66.8
1250		94.5	94.7	94.8	95.0	95.2	95.5	95.6	95.8	96.0	96.1	96.8	98.0	99.9	102.0	103.8	102.6	93.1	79.3	64.4
1600		93.2	93.4	93.5	93.7	93.9	94.2	94.3	94.5	94.7	94.8	95.5	96.7	98.6	100.7	102.5	101.3	91.8	78.0	63.1
2000		89.1	89.3	89.4	89.6	89.8	90.1	90.2	90.4	90.6	90.7	91.4	92.6	94.5	96.6	98.4	97.2	87.7	73.9	59.0
2500		86.5	86.7	86.8	87.0	87.2	87.5	87.6	87.8	88.0	88.1	88.8	90.0	91.9	94.0	95.8	94.6	85.1	71.3	56.4
3150		82.3	82.5	82.6	82.8	83.0	83.3	83.4	83.6	83.8	83.9	84.6	85.8	87.7	89.8	91.6	90.4	80.9	67.1	52.2
4000		79.1	79.3	79.4	79.6	79.8	80.1	80.2	80.4	80.6	80.7	81.4	82.6	84.5	86.6	88.4	87.2	77.7	63.9	49.0
5000		74.2	74.4	74.5	74.7	74.9	75.2	75.3	75.5	75.7	75.8	76.5	77.7	79.6	81.7	83.5	82.3	72.8	59.0	44.1
6300		67.5	67.7	67.8	68.0	68.2	68.5	68.6	68.8	69.0	69.1	69.8	71.0	72.9	75.0	76.8	75.6	66.1	52.3	37.4
8000		59.7	59.9	60.0	60.2	60.4	60.7	60.8	61.0	61.2	61.3	62.0	63.2	65.1	67.2	69.0	67.8	58.3	44.5	29.6
10000		57.3	57.5	57.6	57.8	58.0	58.3	58.4	58.6	58.8	58.9	59.6	60.8	62.7	64.8	66.6	65.4	55.9	42.1	27.2

Canadair CRJ (CL601)		1/3 Octave Band Sound Pressure Level at 200 feet																		
1/3 Octave Band (Hz)	Angle (degrees)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
50	105.5	105.7	105.9	106.0	106.3	106.5	106.6	106.8	107.0	107.2	107.8	109.1	110.9	113.0	114.8	113.6	104.2	90.3	75.4	
63	100.9	101.1	101.3	101.4	101.7	101.9	102.0	102.2	102.4	102.6	103.2	104.5	106.3	108.4	110.2	109.0	99.6	85.7	70.8	
80	100.0	100.2	100.4	100.5	100.8	101.0	101.1	101.3	101.5	101.7	102.3	103.6	105.4	107.5	109.3	108.1	98.7	84.8	69.9	
100	102.9	103.1	103.3	103.4	103.7	103.9	104.0	104.2	104.4	104.6	105.2	106.5	108.3	110.4	112.2	111.0	101.6	87.7	72.8	
125	104.1	104.3	104.5	104.6	104.9	105.1	105.2	105.4	105.6	105.8	106.4	107.7	109.5	111.6	113.4	112.2	102.8	88.9	74.0	
160	102.8	103.0	103.2	103.3	103.6	103.8	103.9	104.1	104.3	104.5	105.1	106.4	108.2	110.3	112.1	110.9	101.5	87.6	72.7	
200	98.0	98.2	98.4	98.5	98.8	99.0	99.1	99.3	99.5	99.7	100.3	101.6	103.4	105.5	107.3	106.1	96.7	82.8	67.9	
250	98.1	98.3	98.5	98.6	98.9	99.1	99.2	99.4	99.6	99.8	100.4	101.7	103.5	105.6	107.4	106.2	96.8	82.9	68.0	
315	96.3	96.5	96.7	96.8	97.1	97.3	97.4	97.6	97.8	98.0	98.6	99.9	101.7	103.8	105.6	104.4	95.0	81.1	66.2	
400	95.1	95.3	95.5	95.6	95.9	96.1	96.2	96.4	96.6	96.8	97.4	98.7	100.5	102.6	104.4	103.2	93.8	79.9	65.0	
500	92.8	93.0	93.2	93.3	93.6	93.8	93.9	94.1	94.3	94.5	95.1	96.4	98.2	100.3	102.1	100.9	91.5	77.6	62.7	
630	90.7	90.9	91.1	91.2	91.5	91.7	91.8	92.0	92.2	92.4	93.0	94.3	96.1	98.2	100.0	98.8	89.4	75.5	60.6	
800	88.9	89.1	89.3	89.4	89.7	89.9	90.0	90.2	90.4	90.6	91.2	92.5	94.3	96.4	98.2	97.0	87.6	73.7	58.8	
1000	86.8	87.0	87.2	87.3	87.6	87.8	87.9	88.1	88.3	88.5	89.1	90.4	92.2	94.3	96.1	94.9	85.5	71.6	56.7	
1250	85.1	85.3	85.5	85.6	85.9	86.1	86.2	86.4	86.6	86.8	87.4	88.7	90.5	92.6	94.4	93.2	83.8	69.9	55.0	
1600	82.9	83.1	83.3	83.4	83.7	83.9	84.0	84.2	84.4	84.6	85.2	86.5	88.3	90.4	92.2	91.0	81.6	67.7	52.8	
2000	80.1	80.3	80.5	80.6	80.9	81.1	81.2	81.4	81.6	81.8	82.4	83.7	85.5	87.6	89.4	88.2	78.8	64.9	50.0	
2500	78.5	78.7	78.9	79.0	79.3	79.5	79.6	79.8	80.0	80.2	80.8	82.1	83.9	86.0	87.8	86.6	77.2	63.3	48.4	
3150	75.8	76.0	76.2	76.3	76.6	76.8	76.9	77.1	77.3	77.5	78.1	79.4	81.2	83.3	85.1	83.9	74.5	60.6	45.7	
4000	71.6	71.8	72.0	72.1	72.4	72.6	72.7	72.9	73.1	73.3	73.9	75.2	77.0	79.1	80.9	79.7	70.3	56.4	41.5	
5000	68.4	68.6	68.8	68.9	69.2	69.4	69.5	69.7	69.9	70.1	70.7	72.0	73.8	75.9	77.7	76.5	67.1	53.2	38.3	
6300	62.0	62.2	62.4	62.5	62.8	63.0	63.1	63.3	63.5	63.7	64.3	65.6	67.4	69.5	71.3	70.1	60.7	46.8	31.9	
8000	56.7	56.9	57.1	57.2	57.5	57.7	57.8	58.0	58.2	58.4	59.0	60.3	62.1	64.2	66.0	64.8	55.4	41.5	26.6	
10000	48.9	49.1	49.3	49.4	49.7	49.9	50.0	50.2	50.4	50.6	51.2	52.5	54.3	56.4	58.2	57.0	47.6	33.7	18.8	

Ground Run-up Data (continued)

Beech 1900 (DHC6)		1/3 Octave Band Sound Pressure Level at 200 feet																		
1/3 Octave Band (Hz)	Angle (degrees)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
50	95.8	96.1	96.2	96.4	96.6	96.8	97.0	97.1	97.4	97.5	98.2	99.4	101.2	103.4	105.1	104.0	94.5	80.7	65.8	
63	94.2	94.5	94.6	94.8	95.0	95.2	95.4	95.5	95.8	95.9	96.6	97.8	99.6	101.8	103.5	102.4	92.9	79.1	64.2	
80	96.5	96.8	96.9	97.1	97.3	97.5	97.7	97.8	98.1	98.2	98.9	100.1	101.9	104.1	105.8	104.7	95.2	81.4	66.5	
100	109.4	109.7	109.8	110.0	110.2	110.4	110.6	110.7	111.0	111.1	111.8	113.0	114.8	117.0	118.7	117.6	108.1	94.3	79.4	
125	101.5	101.8	101.9	102.1	102.3	102.5	102.7	102.8	103.1	103.2	103.9	105.1	106.9	109.1	110.8	109.7	100.2	86.4	71.5	
160	90.6	90.9	91.0	91.2	91.4	91.6	91.8	91.9	92.2	92.3	93.0	94.2	96.0	98.2	99.9	98.8	89.3	75.5	60.6	
200	101.1	101.4	101.5	101.7	101.9	102.1	102.3	102.4	102.7	102.8	103.5	104.7	106.5	108.7	110.4	109.3	99.8	86.0	71.1	
250	90.2	90.5	90.6	90.8	91.0	91.2	91.4	91.5	91.8	91.9	92.6	93.8	95.6	97.8	99.5	98.4	88.9	75.1	60.2	
315	86.8	87.1	87.2	87.4	87.6	87.8	88.0	88.1	88.4	88.5	89.2	90.4	92.2	94.4	96.1	95.0	85.5	71.7	56.8	
400	85.0	85.3	85.4	85.6	85.8	86.0	86.2	86.3	86.6	86.7	87.4	88.6	90.4	92.6	94.3	93.2	83.7	69.9	55.0	
500	85.7	86.0	86.1	86.3	86.5	86.7	86.9	87.0	87.3	87.4	88.1	89.3	91.1	93.3	95.0	93.9	84.4	70.6	55.7	
630	83.1	83.4	83.5	83.7	83.9	84.1	84.3	84.4	84.7	84.8	85.5	86.7	88.5	90.7	92.4	91.3	81.8	68.0	53.1	
800	78.1	78.4	78.5	78.7	78.9	79.1	79.3	79.4	79.7	79.8	80.5	81.7	83.5	85.7	87.4	86.3	76.8	63.0	48.1	
1000	70.9	71.2	71.3	71.5	71.7	71.9	72.1	72.2	72.5	72.6	73.3	74.5	76.3	78.5	80.2	79.1	69.6	55.8	40.9	
1250	65.3	65.6	65.7	65.9	66.1	66.3	66.5	66.6	66.9	67.0	67.7	68.9	70.7	72.9	74.6	73.5	64.0	50.2	35.3	
1600	61.8	62.1	62.2	62.4	62.6	62.8	63.0	63.1	63.4	63.5	64.2	65.4	67.2	69.4	71.1	70.0	60.5	46.7	31.8	
2000	59.5	59.8	59.9	60.1	60.3	60.5	60.7	60.8	61.1	61.2	61.9	63.1	64.9	67.1	68.8	67.7	58.2	44.4	29.5	
2500	56.9	57.2	57.3	57.5	57.7	57.9	58.1	58.2	58.5	58.6	59.3	60.5	62.3	64.5	66.2	65.1	55.6	41.8	26.9	
3150	55.3	55.6	55.7	55.9	56.1	56.3	56.5	56.6	56.9	57.0	57.7	58.9	60.7	62.9	64.6	63.5	54.0	40.2	25.3	
4000	52.6	52.9	53.0	53.2	53.4	53.6	53.8	53.9	54.2	54.3	55.0	56.2	58.0	60.2	61.9	60.8	51.3	37.5	22.6	
5000	51.3	51.6	51.7	51.9	52.1	52.3	52.5	52.6	52.9	53.0	53.7	54.9	56.7	58.9	60.6	59.5	50.0	36.2	21.3	
6300	45.8	46.1	46.2	46.4	46.6	46.8	47.0	47.1	47.4	47.5	48.2	49.4	51.2	53.4	55.1	54.0	44.5	30.7	15.8	
8000	38.3	38.6	38.7	38.9	39.1	39.3	39.5	39.6	39.9	40.0	40.7	41.9	43.7	45.9	47.6	46.5	37.0	23.2	8.3	
10000	31.8	32.1	32.2	32.4	32.6	32.8	33.0	33.1	33.4	33.5	34.2	35.4	37.2	39.4	41.1	40.0	30.5	16.7	1.8	

Auxiliary Power Unit Data

Boeing 767 APU		1/3 Octave Band Sound Pressure Level at 200 feet																		
1/3 Octave Band (Hz)	Angle (degrees)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
25	72.7	71.1	69.6	68.0	66.5	66.6	68.2	69.9	71.6	73.3	74.8	76.3	77.8	79.3	79.1	77.1	75.1	73.1	71.0	
31	70.9	69.4	68.0	66.5	65.1	65.1	66.7	68.2	69.7	71.3	72.5	73.6	74.8	76.0	76.0	74.9	73.8	72.8	71.7	
40	71.2	70.3	69.4	68.5	67.6	67.5	68.2	68.9	69.6	70.4	70.8	71.3	71.8	72.2	72.4	72.2	71.9	71.7	71.5	
50	69.6	68.9	68.1	67.4	66.7	67.1	68.6	70.1	71.7	73.2	72.2	71.2	70.2	69.2	69.3	70.6	71.8	73.1	74.3	
63	68.8	68.3	67.8	67.3	66.8	67.5	69.6	71.6	73.7	75.7	74.1	72.4	70.8	69.1	69.2	71.0	72.9	74.7	76.6	
80	67.6	67.1	66.6	66.1	65.6	66.4	68.6	70.7	72.9	75.0	73.8	72.5	71.3	70.0	70.0	71.3	72.6	73.9	75.1	
100	72.8	73.8	74.8	75.9	76.9	77.1	76.4	75.7	75.1	74.4	73.3	72.3	71.2	70.1	70.2	71.5	72.7	73.9	75.2	
125	70.8	69.7	68.7	67.6	66.6	66.7	67.9	69.2	70.4	71.7	70.8	70.0	69.2	68.4	69.0	70.9	72.9	74.9	76.9	
160	67.3	67.0	66.7	66.5	66.2	66.5	67.2	67.9	68.6	69.3	68.8	68.3	67.8	67.2	67.8	69.4	71.0	72.5	74.1	
200	64.5	64.5	64.6	64.7	64.7	64.8	64.8	64.8	64.8	64.8	65.5	66.3	67.0	67.8	68.4	69.0	69.5	70.0	70.5	
250	61.9	62.2	62.5	62.8	63.0	63.2	63.2	63.1	63.1	63.1	63.0	63.0	62.9	62.9	63.5	64.6	65.8	66.9	68.1	
315	62.5	62.7	62.8	62.9	63.0	63.6	64.7	65.7	66.8	67.8	67.0	66.1	65.3	64.4	64.4	65.1	65.8	66.6	67.3	
400	64.5	64.6	64.6	64.7	64.7	64.9	65.3	65.7	66.0	66.4	67.2	68.1	68.9	69.8	70.0	69.6	69.2	68.8	68.4	
500	67.5	67.3	67.1	66.9	66.6	66.6	66.8	67.0	67.2	67.4	69.2	71.0	72.8	74.6	74.8	73.6	72.3	71.1	69.8	
630	69.1	68.9	68.7	68.5	68.3	68.6	69.3	70.0	70.8	71.5	72.9	74.4	75.8	77.2	77.3	76.2	75.0	73.9	72.7	
800	67.5	67.5	67.6	67.6	67.6	67.5	67.2	66.9	66.6	66.3	68.0	69.8	71.5	73.2	73.5	72.5	71.4	70.3	69.3	
1000	66.6	66.8	67.0	67.3	67.5	68.0	68.7	69.5	70.3	71.1	72.0	73.0	73.9	74.9	74.3	72.1	69.9	67.7	65.5	
1250	70.1	70.3	70.5	70.8	71.0	71.5	72.2	73.0	73.7	74.5	76.5	78.5	80.5	82.5	82.4	80.3	78.2	76.1	74.0	
1600	66.7	66.6	66.5	66.5	66.4	66.9	67.9	69.0	70.0	71.1	71.7	72.4	73.1	73.7	73.2	71.4	69.6	67.8	66.0	
2000	66.9	66.9	66.8	66.7	66.7	67.0	67.8	68.5	69.3	70.1	71.3	72.4	73.6	74.8	74.4	72.4	70.4	68.4	66.3	
2500	66.1	66.1	66.1	66.1	66.1	66.6	67.5	68.5	69.5	70.5	71.5	72.6	73.6	74.7	74.1	71.8	69.6	67.4	65.2	
3150	64.4	64.2	63.9	63.7	63.5	64.0	65.1	66.2	67.3	68.4	69.3	70.1	71.0	71.9	71.2	68.7	66.3	63.9	61.4	
4000	62.9	62.6	62.3	61.9	61.6	62.0	63.1	64.1	65.2	66.2	67.4	68.6	69.7	70.9	70.2	67.7	65.2	62.7	60.2	
5000	61.5	60.9	60.4	59.9	59.3	59.8	61.2	62.6	64.1	65.5	66.2	66.9	67.5	68.2	67.5	65.4	63.3	61.2	59.0	
6300	59.9	59.1	58.3	57.5	56.6	57.0	58.5	59.9	61.4	62.9	63.8	64.8	65.7	66.6	65.9	63.6	61.2	58.9	56.6	
8000	55.2	54.6	54.1	53.6	53.1	53.8	55.6	57.4	59.2	61.0	62.0	62.9	63.8	64.7	63.7	60.7	57.8	54.8	51.8	
10000	53.7	53.0	52.3	51.7	51.0	51.6	53.7	55.7	57.7	59.7	60.9	62.0	63.1	64.2	63.3	60.2	57.2	54.2	51.1	
12500	50.7	49.9	49.2	48.4	47.6	47.9	49.4	50.8	52.3	53.7	54.5	55.2	56.0	56.7	56.0	53.8	51.6	49.3	47.1	
16000	37.6	37.1	36.7	36.2	35.8	36.5	38.3	40.1	42.0	43.8	44.2	44.7	45.1	45.6	44.4	41.7	39.0	36.3	33.6	
20000	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	

Boeing 767 APU		1/3 Octave Band Sound Pressure Level at 200 feet																	
1/3 Octave Band (Hz)		Angle (degrees)																	
		190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	
25	73.4	73.9	74.3	74.7	73.6	74.9	76.2	77.5	78.8	79.0	79.2	79.4	79.6	79.6	78.9	77.3	75.8	74.2	
31	69.1	68.6	68.2	67.7	70.7	73.1	75.5	77.9	80.2	79.6	79.0	78.4	77.8	76.7	75.3	73.8	72.4		
40	69.1	68.7	68.3	67.8	70.7	72.9	75.1	77.3	79.5	78.6	77.6	76.7	75.7	74.8	73.9	73.0	72.1		
50	70.2	69.5	68.7	68.0	71.5	72.5	73.6	74.7	75.7	75.1	74.5	73.9	73.2	72.6	71.8	71.1	70.3		
63	72.5	71.7	71.0	70.2	73.1	72.9	72.7	72.5	72.2	72.0	71.7	71.4	71.1	70.8	70.3	69.8	69.3		
80	73.6	73.4	73.1	72.8	73.6	72.9	72.3	71.6	71.0	70.7	70.5	70.2	70.0	69.6	69.1	68.6	68.1		
100	70.1	69.2	68.2	67.3	71.0	70.9	70.9	70.8	70.7	70.2	69.6	69.0	68.4	68.7	69.7	70.7	71.8		
125	72.1	71.3	70.4	69.6	72.4	71.3	70.1	69.0	67.8	69.6	71.3	73.0	74.7	75.1	74.0	72.9	71.9		
160	70.0	69.3	68.6	67.8	70.6	70.3	69.9	69.6	69.3	69.1	68.9	68.7	68.5	68.3	68.0	67.8	67.5		
200	70.0	69.9	69.9	69.8	70.2	70.2	70.2	70.3	70.3	69.0	67.6	66.2	64.9	64.2	64.3	64.4	64.4		
250	68.8	68.9	69.0	69.1	68.1	67.0	66.0	64.9	63.8	63.1	62.4	61.6	60.9	60.7	61.0	61.3	61.6		
315	69.0	69.3	69.6	69.9	68.5	68.1	67.8	67.4	67.0	65.9	64.8	63.7	62.6	62.1	62.2	62.3	62.4		
400	68.8	68.9	68.9	69.0	68.6	68.5	68.3	68.2	68.0	67.2	66.3	65.5	64.7	64.3	64.3	64.4	64.4		
500	74.6	75.5	76.4	77.2	73.3	72.3	71.3	70.4	69.4	69.2	69.0	68.8	68.6	68.4	68.2	67.9	67.7		
630	78.6	79.7	80.8	81.8	77.1	76.2	75.4	74.5	73.6	72.8	72.0	71.3	70.5	70.0	69.7	69.5	69.3		
800	77.7	79.2	80.8	82.3	76.0	75.6	75.2	74.8	74.5	72.9	71.3	69.7	68.1	67.3	67.3	67.4	67.4		
1000	72.0	73.1	74.3	75.5	70.9	71.0	71.2	71.3	71.5	70.2	68.9	67.6	66.2	65.7	65.9	66.1	66.4		
1250	80.2	81.4	82.5	83.6	78.4	77.2	75.9	74.6	73.4	72.4	71.4	70.4	69.5	69.1	69.3	69.6	69.8		
1600	78.1	80.3	82.5	84.7	75.5	74.8	74.1	73.3	72.6	71.4	70.2	68.9	67.7	67.1	67.0	66.9	66.8		
2000	79.2	81.6	83.9	86.3	76.1	74.6	73.0	71.4	69.9	69.3	68.7	68.1	67.6	67.2	67.2	67.1	67.0		
2500	77.4	79.7	81.9	84.1	74.6	73.3	72.0	70.7	69.4	68.7	68.0	67.2	66.5	66.1	66.1	66.1	66.1		
3150	75.6	78.2	80.8	83.3	72.4	71.1	69.8	68.5	67.2	66.8	66.4	66.0	65.6	65.2	65.0	64.8	64.6		
4000	72.8	75.1	77.5	79.8	70.0	69.0	68.0	67.0	66.0	65.6	65.2	64.8	64.5	64.1	63.8	63.5	63.2		
5000	71.5	73.8	76.0	78.3	68.7	67.5	66.3	65.1	63.9	63.9	63.9	63.9	63.9	63.6	63.1	62.6	62.0		
6300	71.3	74.0	76.6	79.3	67.8	66.1	64.4	62.7	61.1	61.6	62.2	62.7	63.3	63.2	62.3	61.5	60.7		
8000	68.3	71.3	74.3	77.3	64.6	63.1	61.6	60.1	58.6	58.3	58.1	57.8	57.6	57.2	56.7	56.2	55.7		
10000	68.1	71.2	74.3	77.4	64.1	62.2	60.2	58.3	56.4	56.5	56.6	56.7	56.8	56.5	55.8	55.1	54.4		
12500	58.6	60.7	62.8	64.9	55.9	54.5	53.2	51.9	50.6	51.4	52.2	53.0	53.8	53.8	53.0	52.3	51.5		
16000	47.8	50.3	52.9	55.5	44.7	43.6	42.5	41.4	40.4	40.2	40.0	39.9	39.7	39.4	38.9	38.5	38.0		
20000	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9		

ATTACHMENT C MODELED AIRCRAFT GROUND OPERATIONS

This attachment provides information on the aircraft ground operations modeled for each scenario. The tables provide the annual average daily operating duration, in minutes, used to model ground noise sources for day and night periods in each scenario. There are eight tables corresponding to the following sets of data:

- Build Out (2013) Alternative A day
- Build Out (2013) Alternative A night
- Build Out (2013) Alternative C day
- Build Out (2013) Alternative C night
- Build Out+5 (2018) Alternative A day
- Build Out+5 (2018) Alternative A night
- Build Out+5 (2018) Alternative C day
- Build Out+5 (2018) Alternative C night

Sources in the tables include:

- Aircraft taxiing on airport taxiways and at gates,
- Aircraft idling either at queue positions or in gate delay,
- Aircraft ground run-ups located both within and outside the ground run-up enclosure, and
- Auxiliary power units running in conjunction with cargo operations.

Modeled sources representing taxiway locations, gate areas, auxiliary power units and ground run-ups have an orientation corresponding to those depicted for each source location in Figure 1 for the Alternative A scenarios and Figure 2 **Error! Reference source not found.** for the Alternative C scenarios. The tables provide operations data for both the orientation shown in the figure and for the opposite orientation (i.e. aircraft heading in the other direction). The "Activity" column shows the type of activity modeled at each source location, corresponding to either one or both of the source orientations. Each of the tables provides operations data for each of five representative aircraft types described in Section 2.2.2.1.

Table C.1 Build Out (2013) Alternative A: Day

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Queue: Taxi/Idle	As Shown	25.9	15.8	285.0	156.0	2.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
2	Queue: Taxi/Idle	As Shown	21.2	13.0	228.9	125.3	1.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
3	Queue: Taxi/Idle	As Shown	8.5	5.3	63.2	34.5	0.6
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	2.6	1.7	4.8	3.7	0.2
		Opposite	0.1	0.0	0.0	0.8	0.1
5	Taxi	As Shown	0.0	0.0	0.0	0.4	0.0
		Opposite	0.0	0.0	0.0	0.6	0.0
6	Taxi	As Shown	0.1	0.0	0.0	1.2	0.1
		Opposite	0.0	0.0	0.0	1.8	0.1
7	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	1.2	0.1
		Opposite	0.1	0.0	0.0	0.8	0.1
9	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.4	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.0	1.2	0.1
11	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Queue: Taxi/Idle	As Shown	3.5	2.1	40.3	25.1	1.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	1.0	1.2	0.1
14	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	1.2	1.4	0.1
15	Taxi	As Shown	0.2	0.1	0.9	1.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.1	0.1	1.1	0.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
17	Taxi	As Shown	0.2	0.2	1.5	1.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Taxi	As Shown	0.2	0.4	0.0	13.7	1.6
		Opposite	0.7	0.5	0.0	18.3	2.0
19	Taxi	As Shown	0.3	0.6	0.0	20.6	2.4
		Opposite	1.1	0.8	0.0	27.5	2.9
20	Taxi	As Shown	0.2	0.4	0.0	13.7	1.6
		Opposite	0.7	0.5	0.0	18.3	2.0
21	Taxi	As Shown	0.4	0.3	0.0	9.2	1.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.1	0.1	0.0	4.1	0.5
22	Taxi	As Shown	0.1	0.1	0.0	4.9	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.4	0.3	0.0	9.2	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.3	0.0	8.0	0.9
26	Queue: Taxi/Idle	As Shown	24.4	15.9	179.6	102.2	1.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	5.4	3.9	35.3	30.3	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	5.4	3.9	35.3	30.3	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	10.5	7.9	61.2	57.6	1.0
		Opposite	0.0	0.0	9.2	0.2	0.0
30	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.6	0.7	0.1
31	Taxi	As Shown	10.5	7.9	61.2	56.2	0.9
		Opposite	0.1	0.1	10.4	0.2	0.0
34	Taxi	As Shown	7.8	6.1	64.4	78.1	2.1
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	0.1	0.0	0.0	1.2	0.1
		Opposite	0.0	0.0	0.0	1.8	0.1
36	Taxi	As Shown	0.0	0.0	0.0	1.2	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.1	0.1	0.0	4.1	0.5
		Opposite	0.0	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.1	0.0	0.0	1.5	0.5
		Opposite	0.0	0.0	0.0	0.0	0.0
42	Queue: Taxi/Idle	As Shown	63.6	38.7	796.0	443.7	5.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.2	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Queue: Taxi/Idle	As Shown	63.7	38.9	809.8	449.0	5.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
49	Queue: Taxi/Idle	As Shown	42.4	25.8	533.1	294.7	3.6
	Taxi	Opposite	0.1	0.2	13.7	8.3	0.1
50	Queue: Taxi/Idle	As Shown	42.5	25.9	530.4	293.2	3.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	0.2	0.4	27.3	16.6	0.2

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
52	Queue: Taxi/Idle	As Shown	46.1	28.0	498.1	273.2	3.4
	Taxi	Opposite	0.2	0.2	12.9	7.7	0.1
53	Queue: Taxi/Idle	As Shown	49.3	31.6	563.3	314.1	3.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	1.4	0.7	8.8	5.1	0.1
		Opposite	0.8	0.2	0.3	0.0	0.0
55	Taxi	As Shown	7.8	7.1	84.0	52.0	0.5
		Opposite	0.9	0.5	0.1	0.0	0.0
56	Taxi	As Shown	3.0	1.3	0.2	0.0	0.0
		Opposite	0.2	0.2	12.9	7.7	0.1
57	Taxi	As Shown	1.8	0.9	8.8	5.1	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
58	Taxi	As Shown	4.0	1.4	11.8	6.1	0.1
		Opposite	2.1	2.0	29.7	22.3	0.2
59	Taxi	As Shown	2.2	1.2	10.2	6.1	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.1	0.2	0.0	6.6	0.8
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	15.6	7.4	1.3	0.0	0.0
		Opposite	0.6	0.2	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	2.6	1.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
64	Taxi	As Shown	0.0	0.0	2.3	1.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
65	Taxi	As Shown	0.0	0.0	3.5	2.1	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
66	Taxi	As Shown	12.4	6.1	11.0	6.0	0.2
		Opposite	0.5	0.1	0.0	0.0	0.0
67	Queue: Taxi/Idle	As Shown	6.5	3.5	39.5	21.5	0.3
	Taxi	Opposite	0.9	0.7	0.2	0.0	0.0
68	Taxi	As Shown	1.6	1.5	5.4	3.0	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Queue: Taxi/Idle	As Shown	9.7	4.1	39.5	21.5	0.3
	Taxi	Opposite	1.1	1.0	0.3	0.0	0.0
70	Taxi	As Shown	8.0	1.9	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.2	0.1	2.2	1.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
72	Taxi	As Shown	1.6	1.5	5.4	3.0	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	6.0	1.5	0.2	0.0	0.0
		Opposite	0.4	0.1	4.5	3.7	0.0
74	Taxi	As Shown	2.2	0.6	0.1	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.2	0.1	2.2	1.9	0.0
75	Taxi	As Shown	2.4	0.6	0.0	0.0	0.0
		Opposite	0.8	0.3	0.1	0.0	0.0
76	Taxi	As Shown	3.6	0.8	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
77	Taxi	As Shown	2.1	0.8	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
78	Taxi	As Shown	0.5	0.2	5.7	3.1	0.0
	Queue: Taxi/Idle	Opposite	2.1	0.8	0.3	0.3	0.0
79	Taxi	As Shown	1.5	0.5	17.1	9.2	0.1
		Opposite	6.3	2.3	0.8	0.8	0.0
80	Taxi	As Shown	0.8	0.3	9.2	5.6	0.1
		Opposite	1.5	0.3	0.0	0.0	0.0
81	Taxi	As Shown	2.7	0.9	29.8	17.2	0.2
		Opposite	4.2	1.5	0.6	0.5	0.0
82	Taxi	As Shown	1.5	1.0	10.8	5.8	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
83	Taxi	As Shown	2.3	1.1	10.4	11.5	0.0
		Opposite	2.3	1.1	15.7	8.7	0.0
84	Taxi	As Shown	6.2	3.1	19.8	0.3	0.0
		Opposite	1.8	1.0	0.1	0.0	0.0
85	Taxi	As Shown	0.9	0.3	7.6	4.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	11.8	6.4	41.7	10.9	0.0
		Opposite	2.7	1.4	0.2	0.0	0.0
88	Taxi	As Shown	0.0	0.0	0.0	1.7	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.1	0.1	7.0	4.7	0.1
		Opposite	0.3	0.4	3.4	3.5	0.0
91	Taxi	As Shown	2.9	0.7	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
92	Taxi	As Shown	0.3	0.1	9.1	11.5	0.0
		Opposite	2.5	1.3	24.3	8.9	0.0
93	Taxi	As Shown	0.7	0.3	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Queue: Taxi/Idle	As Shown	16.6	10.4	241.9	121.4	1.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
96	Taxi	As Shown	0.8	0.4	17.9	4.6	0.2
		Opposite	1.7	0.7	20.1	9.3	0.2
97	Queue: Taxi/Idle	As Shown	55.1	33.7	707.6	378.8	4.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Queue: Taxi/Idle	As Shown	54.3	33.5	718.0	379.9	4.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
103	Queue: Taxi/Idle	As Shown	16.7	10.7	267.3	133.0	1.6

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
104	Taxi	As Shown	0.0	0.1	5.1	5.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
105	Taxi	As Shown	0.5	0.1	6.3	4.6	0.0
		Opposite	0.2	0.3	14.6	7.2	0.2
106	Taxi	As Shown	0.5	0.1	5.9	4.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	0.3	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Queue: Taxi/Idle	As Shown	16.3	10.2	238.7	119.6	1.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
112	Taxi	As Shown	2.2	1.5	84.2	27.8	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	0.4	0.4	42.6	15.2	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.3	0.1	2.9	2.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
115	Taxi	As Shown	0.1	0.2	11.2	3.7	0.0
		Opposite	0.2	0.1	27.5	10.7	0.1
116	Taxi	As Shown	3.6	2.3	83.2	25.3	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
117	Taxi	As Shown	0.1	0.2	11.2	3.7	0.0
		Opposite	0.2	0.1	27.5	10.7	0.1
118	Queue: Taxi/Idle	As Shown	4.2	2.4	45.8	25.1	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
119	Queue: Taxi/Idle	As Shown	3.9	2.4	73.3	35.7	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
120	Queue: Taxi/Idle	As Shown	15.4	9.3	210.6	110.9	1.4
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
121	Taxi	As Shown	0.9	0.4	22.4	7.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	1.3	0.8	4.1	1.8	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	47.6	29.0	621.4	325.6	4.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
124	Taxi	As Shown	0.3	0.5	12.7	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
127	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.9	0.5	40.4	12.1	0.1
128	Taxi	As Shown	4.4	3.7	59.1	26.1	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
129	Taxi	As Shown	2.0	1.0	42.3	23.2	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
130	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
131	Taxi	As Shown	0.7	0.8	10.0	1.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
132	Taxi	As Shown	0.7	0.8	8.9	1.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
133	Queue: Taxi/Idle	As Shown	16.6	10.2	214.7	112.7	1.5
	Taxi	Opposite	0.7	0.8	8.9	1.4	0.0
134	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.8	0.1	0.0	0.0	0.0
135	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
136	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
137	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
138	Taxi	As Shown	2.5	1.6	4.8	2.5	0.1
		Opposite	0.0	0.0	0.0	0.3	0.0
140	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	1.3	0.8	2.4	1.3	0.1
141	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.0	0.0	0.0
142	Taxi	As Shown	0.9	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
143	Taxi	As Shown	1.3	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
144	Queue: Taxi/Idle	As Shown	5.1	2.9	55.7	30.5	0.4
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
145	Taxi	As Shown	1.3	0.8	2.4	1.8	0.1
		Opposite	0.0	0.0	0.0	0.1	0.0
146	Taxi	As Shown	2.5	1.6	4.8	2.5	0.1
		Opposite	0.1	0.0	0.0	0.3	0.0
147	Taxi	As Shown	0.1	0.0	0.0	2.9	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
148	Taxi	As Shown	2.5	1.6	4.8	2.5	0.1
		Opposite	0.1	0.0	0.0	0.3	0.0
149	Taxi	As Shown	0.1	0.0	7.7	4.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
150	Taxi	As Shown	0.2	0.2	12.9	7.7	0.1
		Opposite	1.7	0.4	0.0	0.4	0.0
151	Taxi	As Shown	0.2	0.4	13.0	7.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
152	Taxi	As Shown	0.3	0.5	12.7	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
153	Taxi	As Shown	1.1	1.1	6.2	2.8	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
W1	Gate: Taxi/Idle	As Shown	9.6	6.1	166.1	38.7	0.5
		Opposite	20.2	14.8	244.0	122.8	1.8
W2	Gate: Taxi/Idle	As Shown	11.0	7.1	243.4	41.9	0.5
		Opposite	12.8	8.0	268.0	81.5	1.5
W3	Gate: Taxi/Idle	As Shown	14.9	9.1	337.8	104.9	1.4
		Opposite	12.0	7.6	291.5	46.0	0.5
W4	Gate: Taxi/Idle	As Shown	25.0	14.6	463.8	260.7	4.3
		Opposite	15.8	8.4	310.7	76.6	0.6
S1	Gate: Taxi/Idle	As Shown	29.4	16.5	437.4	285.2	3.9
		Opposite	27.0	18.3	543.5	264.1	1.1
S2	Gate: Taxi/Idle	As Shown	23.2	16.2	385.0	295.5	2.6
		Opposite	17.2	14.7	415.6	283.4	1.0
S3E1	Gate: Taxi/Idle	As Shown	31.9	20.5	266.7	213.5	2.3
		Opposite	36.0	23.8	273.4	243.0	5.1
E2	Gate: Taxi/Idle	As Shown	23.4	10.0	197.8	113.8	1.3
		Opposite	23.6	9.7	345.3	245.2	2.0
E3	Gate: Taxi/Idle	As Shown	13.0	5.1	87.1	47.2	0.6
		Opposite	13.5	5.2	135.8	88.0	0.1
C1a	Gate: Taxi/Idle	As Shown	1.3	0.6	0.1	0.0	0.0
		Opposite	1.3	0.6	0.1	0.0	0.0
C1b	Gate: Taxi/Idle	As Shown	1.3	0.6	0.1	0.0	0.0
		Opposite	1.3	0.6	0.1	0.0	0.0
C2a	Gate: Taxi/Idle	As Shown	6.5	3.2	0.7	0.0	0.0
		Opposite	6.5	3.2	0.7	0.0	0.0
C2b	Gate: Taxi/Idle	As Shown	6.5	3.2	0.7	0.0	0.0
		Opposite	6.5	3.2	0.7	0.0	0.0
G1	Gate: Taxi/Idle	As Shown	2.3	1.4	27.6	42.3	3.7
		Opposite	2.3	1.4	27.6	42.3	3.7
K1	Gate: Taxi/Idle	As Shown	1.0	0.9	2.1	2.9	0.1
		Opposite	1.0	0.9	2.1	1.2	0.0
APUK1	APU	As Shown	86.2	88.3	0.0	0.0	0.0
		Opposite	86.2	88.3	0.0	0.0	0.0
APUC1a	APU	As Shown	191.5	120.2	30.8	0.0	0.0
		Opposite	191.5	120.2	30.8	0.0	0.0
APUC1b	APU	As Shown	191.5	120.2	30.8	0.0	0.0
		Opposite	191.5	120.2	30.8	0.0	0.0
APUC2a	APU	As Shown	191.5	120.2	30.8	0.0	0.0
		Opposite	191.5	120.2	30.8	0.0	0.0
APUC2b	APU	As Shown	191.5	120.2	30.8	0.0	0.0
		Opposite	191.5	120.2	30.8	0.0	0.0
RUGRE	Run-up	As Shown	0.0	0.0	3.5	0.2	0.3
RU9	Run-up	South	0.1	0.0	0.1	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
RU32		West	0.1	0.1	0.2	0.0	0.0
		East	0.1	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.2	0.0	0.0
	Run-up	South	0.0	0.0	0.0	0.0	0.0
		West	0.0	0.0	0.0	0.0	0.0
		East	0.0	0.0	0.0	0.0	0.0
		North	0.0	0.0	0.0	0.0	0.0

Table C.2 Build Out (2013) Alternative A: Night

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Queue: Taxi/Idle	As Shown	1.8	2.1	6.6	2.2	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
2	Queue: Taxi/Idle	As Shown	1.5	1.7	5.3	1.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
3	Queue: Taxi/Idle	As Shown	0.7	0.6	1.6	0.6	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	0.3	0.2	0.2	0.3	0.1
		Opposite	0.0	0.0	0.0	0.1	0.0
5	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
6	Taxi	As Shown	0.0	0.1	0.0	0.1	0.0
		Opposite	0.0	0.1	0.0	0.2	0.1
7	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.1	0.0	0.1	0.1
		Opposite	0.0	0.0	0.0	0.1	0.0
9	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.1	0.0
11	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Queue: Taxi/Idle	As Shown	0.1	0.2	0.3	0.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.4	0.2	0.0
14	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.5	0.0	0.0
15	Taxi	As Shown	0.0	0.0	0.4	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.0	0.0	0.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
17	Taxi	As Shown	0.0	0.0	0.6	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Taxi	As Shown	0.0	0.1	0.0	0.5	0.1
		Opposite	0.2	0.2	0.0	1.1	0.0
19	Taxi	As Shown	0.0	0.1	0.0	0.8	0.2
		Opposite	0.3	0.4	0.0	1.6	0.0
20	Taxi	As Shown	0.0	0.1	0.0	0.5	0.1
		Opposite	0.2	0.2	0.0	1.1	0.0
21	Taxi	As Shown	0.1	0.1	0.0	0.5	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.2	0.0
22	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.1	0.1	0.0	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.4	0.1
26	Queue: Taxi/Idle	As Shown	1.8	2.4	9.9	4.1	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	0.3	0.2	1.9	1.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	0.3	0.2	1.9	1.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	0.7	0.4	3.0	3.0	0.1
		Opposite	0.0	0.0	0.5	0.0	0.0
30	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.3	0.0	0.0
31	Taxi	As Shown	0.7	0.4	3.0	2.9	0.1
		Opposite	0.0	0.0	1.0	0.0	0.0
34	Taxi	As Shown	0.8	0.6	2.7	4.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	0.0	0.1	0.0	0.1	0.0
		Opposite	0.0	0.1	0.0	0.2	0.1
36	Taxi	As Shown	0.0	0.1	0.0	0.1	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
42	Queue: Taxi/Idle	As Shown	5.8	7.7	26.8	9.3	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.0	0.2	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Queue: Taxi/Idle	As Shown	6.0	8.1	28.1	9.6	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
49	Queue: Taxi/Idle	As Shown	3.9	5.1	18.1	6.1	0.2
	Taxi	Opposite	0.0	0.0	0.1	0.1	0.0
50	Queue: Taxi/Idle	As Shown	4.0	5.3	17.9	6.1	0.2
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	0.0	0.1	0.2	0.1	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
52	Queue: Taxi/Idle	As Shown	12.9	16.2	51.3	17.1	0.5
	Taxi	Opposite	0.0	0.1	0.1	0.1	0.0
53	Queue: Taxi/Idle	As Shown	14.4	17.9	58.6	20.3	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	0.1	0.1	1.0	0.2	0.0
		Opposite	0.3	0.1	0.0	0.0	0.0
55	Taxi	As Shown	2.8	3.1	10.7	4.8	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
56	Taxi	As Shown	0.7	0.8	0.5	0.3	0.0
		Opposite	0.0	0.1	0.1	0.1	0.0
57	Taxi	As Shown	0.1	0.2	1.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
58	Taxi	As Shown	0.6	0.9	1.3	0.2	0.0
		Opposite	0.7	0.8	3.3	1.9	0.0
59	Taxi	As Shown	0.1	0.2	1.2	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.0	0.0	0.0	0.3	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	3.5	4.1	2.4	1.3	0.0
		Opposite	0.0	0.3	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
64	Taxi	As Shown	0.0	0.0	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
65	Taxi	As Shown	0.0	0.0	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
66	Taxi	As Shown	2.8	3.4	2.6	1.0	0.0
		Opposite	0.0	0.2	0.0	0.0	0.0
67	Queue: Taxi/Idle	As Shown	1.5	1.9	3.5	1.2	0.0
	Taxi	Opposite	0.4	0.4	0.0	0.0	0.0
68	Taxi	As Shown	0.7	0.8	0.4	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Queue: Taxi/Idle	As Shown	2.6	3.0	3.6	1.2	0.0
	Taxi	Opposite	0.1	0.2	0.0	0.0	0.0
70	Taxi	As Shown	2.3	2.4	1.6	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.2	0.2	0.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
72	Taxi	As Shown	0.7	0.8	0.4	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	1.7	2.0	1.1	0.4	0.0
		Opposite	0.3	0.4	0.9	0.4	0.0
74	Taxi	As Shown	0.6	0.8	0.3	0.1	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.2	0.2	0.5	0.2	0.0
75	Taxi	As Shown	0.7	0.7	0.4	0.2	0.0
		Opposite	0.2	0.4	0.0	0.0	0.0
76	Taxi	As Shown	1.0	1.1	0.7	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
77	Taxi	As Shown	0.4	0.4	0.2	0.1	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
78	Taxi	As Shown	0.1	0.2	0.6	0.1	0.0
	Queue: Taxi/Idle	Opposite	3.8	5.1	15.0	4.9	0.2
79	Taxi	As Shown	0.4	0.7	1.9	0.3	0.0
		Opposite	1.4	1.9	1.5	0.6	0.0
80	Taxi	As Shown	0.3	0.5	1.2	0.3	0.0
		Opposite	0.4	0.4	0.3	0.1	0.0
81	Taxi	As Shown	0.9	1.4	3.7	0.9	0.0
		Opposite	0.9	1.2	1.0	0.4	0.0
82	Taxi	As Shown	0.5	0.7	1.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
83	Taxi	As Shown	0.8	1.2	1.3	0.5	0.0
		Opposite	0.5	0.6	1.1	0.3	0.0
84	Taxi	As Shown	2.1	2.3	3.3	0.0	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
85	Taxi	As Shown	0.2	0.4	0.8	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	3.8	4.5	6.7	1.4	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
88	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.0	0.1	0.8	0.1	0.0
		Opposite	0.1	0.2	0.5	0.4	0.0
91	Taxi	As Shown	0.8	0.9	0.6	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
92	Taxi	As Shown	0.2	0.3	1.2	0.5	0.0
		Opposite	0.8	0.9	2.6	0.3	0.0
93	Taxi	As Shown	0.3	0.5	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Queue: Taxi/Idle	As Shown	0.7	1.2	6.5	0.9	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
96	Taxi	As Shown	0.3	0.5	2.1	0.2	0.0
		Opposite	0.4	0.5	1.1	0.2	0.0
97	Queue: Taxi/Idle	As Shown	2.2	2.8	10.7	2.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Queue: Taxi/Idle	As Shown	2.1	2.9	11.6	3.1	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
103	Queue: Taxi/Idle	As Shown	0.9	1.3	6.3	1.4	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
104	Taxi	As Shown	0.0	0.0	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
105	Taxi	As Shown	0.4	0.5	1.3	0.6	0.0
		Opposite	0.0	0.0	0.6	0.1	0.0
106	Taxi	As Shown	0.4	0.5	1.2	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	0.0	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Queue: Taxi/Idle	As Shown	0.9	1.3	5.3	1.4	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
112	Taxi	As Shown	0.4	0.8	4.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	0.2	0.6	3.2	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.2	0.3	0.6	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
115	Taxi	As Shown	0.0	0.0	0.4	0.0	0.0
		Opposite	0.2	0.6	2.6	0.4	0.0
116	Taxi	As Shown	0.4	0.4	1.5	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117	Taxi	As Shown	0.0	0.0	0.4	0.0	0.0
		Opposite	0.2	0.6	2.6	0.4	0.0
118	Queue: Taxi/Idle	As Shown	0.2	0.3	0.6	0.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
119	Queue: Taxi/Idle	As Shown	0.3	0.7	3.2	0.6	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
120	Queue: Taxi/Idle	As Shown	0.7	1.2	5.0	1.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
121	Taxi	As Shown	0.0	0.1	0.9	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.2	0.1	0.3	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	10.8	14.3	46.8	15.2	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
124	Taxi	As Shown	0.0	0.0	0.5	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
127	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.1	1.1	0.5	0.0
128	Taxi	As Shown	0.3	0.2	1.8	1.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
129	Taxi	As Shown	0.1	0.1	1.1	0.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
130	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
131	Taxi	As Shown	0.1	0.0	0.4	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
132	Taxi	As Shown	0.1	0.0	0.3	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
133	Queue: Taxi/Idle	As Shown	0.9	1.4	5.2	1.3	0.0
	Taxi	Opposite	0.1	0.0	0.3	0.2	0.0
134	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
135	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
136	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
137	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
138	Taxi	As Shown	0.3	0.2	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
140	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	0.1	0.1	0.0
141	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
142	Taxi	As Shown	0.1	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
143	Taxi	As Shown	0.1	0.3	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
144	Queue: Taxi/Idle	As Shown	4.7	6.2	20.0	6.5	0.2
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
145	Taxi	As Shown	0.2	0.1	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
146	Taxi	As Shown	0.3	0.2	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
147	Taxi	As Shown	0.0	0.2	0.0	0.4	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
148	Taxi	As Shown	0.3	0.2	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
149	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
150	Taxi	As Shown	0.0	0.1	0.1	0.1	0.0
		Opposite	0.5	0.4	0.2	0.2	0.0
151	Taxi	As Shown	0.0	0.1	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
152	Taxi	As Shown	0.0	0.0	0.5	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
153	Taxi	As Shown	0.1	0.0	0.2	0.3	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
W1	Gate: Taxi/Idle	As Shown	1.3	1.7	10.3	1.1	0.0
		Opposite	2.2	2.2	12.7	5.5	0.2
W2	Gate: Taxi/Idle	As Shown	1.8	2.4	15.3	1.2	0.0
		Opposite	1.9	2.7	15.9	2.9	0.3
W3	Gate: Taxi/Idle	As Shown	2.8	4.4	22.1	3.0	0.3
		Opposite	2.3	3.2	19.6	1.3	0.0
W4	Gate: Taxi/Idle	As Shown	4.9	7.2	30.0	5.5	0.3
		Opposite	5.1	6.7	26.1	4.6	0.0
S1	Gate: Taxi/Idle	As Shown	5.2	7.4	28.8	10.9	0.1
		Opposite	8.7	11.9	46.0	10.7	0.1
S2	Gate: Taxi/Idle	As Shown	3.9	6.1	24.8	13.2	0.1
		Opposite	4.5	7.5	31.2	13.0	0.1
S3E1	Gate: Taxi/Idle	As Shown	3.7	4.5	16.5	9.8	0.1
		Opposite	4.4	5.2	17.1	11.7	0.1
E2	Gate: Taxi/Idle	As Shown	4.2	3.6	10.6	2.1	0.0
		Opposite	6.1	7.9	32.6	15.7	0.0
E3	Gate: Taxi/Idle	As Shown	2.7	1.8	3.5	0.7	0.0
		Opposite	3.4	3.5	12.6	5.5	0.0
C1a	Gate: Taxi/Idle	As Shown	0.2	0.5	0.0	0.0	0.0
		Opposite	0.2	0.5	0.0	0.0	0.0
C1b	Gate: Taxi/Idle	As Shown	0.2	0.5	0.0	0.0	0.0
		Opposite	0.2	0.5	0.0	0.0	0.0
C2a	Gate: Taxi/Idle	As Shown	1.7	2.0	0.1	0.0	0.0
		Opposite	1.7	2.0	0.1	0.0	0.0
C2b	Gate: Taxi/Idle	As Shown	1.7	2.0	0.1	0.0	0.0
		Opposite	1.7	2.0	0.1	0.0	0.0
G1	Gate: Taxi/Idle	As Shown	0.3	0.4	1.4	1.8	0.1
		Opposite	0.3	0.4	1.4	1.8	0.1
K1	Gate: Taxi/Idle	As Shown	0.2	0.4	0.1	0.2	0.1
		Opposite	0.2	0.4	0.1	0.0	0.0
APUK1	APU	As Shown	19.6	43.8	0.0	0.0	0.0
		Opposite	19.6	43.8	0.0	0.0	0.0
APUC1a	APU	As Shown	43.5	59.7	2.5	0.0	0.0
		Opposite	43.5	59.7	2.5	0.0	0.0
APUC1b	APU	As Shown	43.5	59.7	2.5	0.0	0.0
		Opposite	43.5	59.7	2.5	0.0	0.0
APUC2a	APU	As Shown	43.5	59.7	2.5	0.0	0.0
		Opposite	43.5	59.7	2.5	0.0	0.0
APUC2b	APU	As Shown	43.5	59.7	2.5	0.0	0.0
		Opposite	43.5	59.7	2.5	0.0	0.0
RUGRE	Run-up	As Shown	0.1	0.1	22.1	2.2	2.3
RU9	Run-up	South	0.2	0.2	2.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
RU32		West	0.2	0.1	1.7	0.0	0.0
		East	0.1	0.0	0.8	0.0	0.0
		North	0.4	0.3	3.2	0.0	0.1
	Run-up	South	0.0	0.0	0.2	0.0	0.0
		West	0.0	0.1	0.3	0.0	0.0
		East	0.0	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.3	0.0	0.1

Table C.3 Build Out (2013) Alternative C: Day

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Taxi	As Shown	1.0	0.4	10.3	7.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
2	Taxi	As Shown	2.6	1.0	20.3	14.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
3	Taxi	As Shown	5.1	2.0	39.2	28.8	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	3.5	1.9	25.2	16.8	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
5	Taxi	As Shown	1.8	1.0	13.1	8.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
6	Taxi	As Shown	7.1	3.8	51.4	34.3	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
7a	Taxi	As Shown	0.0	0.0	0.0	4.8	1.2
		Opposite	0.0	0.0	0.0	0.0	0.0
7b	Taxi	As Shown	0.0	0.0	0.0	4.8	1.2
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	4.8	1.2
		Opposite	0.0	0.0	0.0	0.0	0.0
9	Taxi	As Shown	8.9	4.7	64.3	42.9	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	12.0	1.3
		Opposite	0.4	0.2	3.9	3.3	0.1
11	Taxi	As Shown	0.0	0.0	0.0	26.1	2.8
		Opposite	0.0	0.0	0.0	1.7	0.2
12	Taxi	As Shown	0.0	0.0	0.0	2.7	0.3
		Opposite	0.0	0.0	0.0	0.9	0.0
13	Taxi	As Shown	0.0	0.0	0.0	18.6	2.2
		Opposite	0.0	0.0	0.0	1.4	0.0
14	Taxi	As Shown	3.1	1.7	21.8	13.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
15	Taxi	As Shown	0.7	0.3	11.3	7.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	28.7	16.1	240.3	145.5	0.0
		Opposite	8.7	4.6	86.6	64.8	1.4
17	Taxi	As Shown	1.9	0.9	19.1	14.3	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Queue: Taxi/Idle	As Shown	36.3	20.2	301.0	182.3	0.0
	Taxi	Opposite	1.5	0.7	25.7	15.6	0.0
19	Taxi	As Shown	0.3	0.1	5.1	12.4	1.1
	Queue: Taxi/Idle	Opposite	0.3	0.1	2.3	1.6	0.0
20	Taxi	As Shown	4.6	3.0	0.5	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
21	Taxi	As Shown	21.5	12.1	180.2	137.1	3.3
		Opposite	0.0	0.0	0.0	0.0	0.0
22	Queue: Taxi/Idle	As Shown	46.4	27.0	555.1	372.2	3.4
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	4.1	1.5	53.9	19.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Queue: Taxi/Idle	As Shown	33.5	18.7	417.8	267.9	2.4
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
26	Queue: Taxi/Idle	As Shown	46.9	27.8	519.4	351.2	3.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	21.5	12.1	180.2	137.1	3.3
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	9.2	5.7	103.4	62.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	14.3	8.1	120.2	85.6	1.8
		Opposite	2.5	1.4	0.2	0.0	0.0
30	Queue: Taxi/Idle	As Shown	57.9	34.4	802.9	564.4	5.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
31	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
32	Queue: Taxi/Idle	As Shown	38.8	22.8	441.5	301.6	2.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
33	Queue: Taxi/Idle	As Shown	35.8	20.8	441.2	301.6	2.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
34	Taxi	As Shown	7.8	5.4	112.9	77.9	1.3
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	13.8	9.1	172.1	90.2	1.2
		Opposite	0.0	0.0	0.0	0.0	0.0
36	Taxi	As Shown	15.7	9.9	229.1	106.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	5.3	3.7	75.4	51.9	0.9
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	3.2	2.1	0.4	0.0	0.0
		Opposite	0.9	0.6	0.1	0.0	0.0
39	Taxi	As Shown	16.0	11.3	226.2	155.8	2.7
		Opposite	3.0	2.0	6.8	5.3	0.0
40	Taxi	As Shown	1.0	0.7	2.3	1.8	0.0
	Queue: Taxi/Idle	Opposite	0.8	0.4	8.3	5.7	0.1
41	Taxi	As Shown	1.6	1.0	3.4	2.7	0.0
		Opposite	4.6	3.0	0.5	0.0	0.0
42	Taxi	As Shown	0.3	0.2	19.0	12.6	0.6

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
43	Queue: Taxi/Idle	As Shown	2.8	1.7	50.3	34.0	0.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
44	Queue: Taxi/Idle	As Shown	3.9	2.3	53.3	36.3	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.4	0.2	4.4	3.6	0.0
		Opposite	0.1	0.1	0.0	0.0	0.0
46	Taxi	As Shown	0.0	0.0	0.6	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
47	Taxi	As Shown	0.1	0.1	1.6	1.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Taxi	As Shown	0.4	0.3	10.8	7.2	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
49	Taxi	As Shown	1.4	1.0	13.1	8.9	0.2
		Opposite	5.3	3.8	75.4	51.9	0.9
50	Taxi	As Shown	0.2	0.2	5.9	4.0	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	18.7	13.2	263.9	181.7	3.1
		Opposite	6.8	4.8	86.9	59.0	1.4
52	Taxi	As Shown	2.1	1.6	27.5	14.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
53	Taxi	As Shown	3.6	1.7	59.6	23.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	0.9	0.6	35.7	2.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
55	Taxi	As Shown	0.6	0.7	21.3	8.6	0.0
		Opposite	3.2	1.4	3.4	35.1	0.0
56	Taxi	As Shown	2.6	1.3	6.8	30.3	0.0
		Opposite	1.9	1.1	35.1	11.8	0.2
57	Taxi	As Shown	3.6	2.0	33.7	26.1	0.3
		Opposite	2.1	0.9	2.3	23.4	0.0
58	Taxi	As Shown	0.7	0.6	32.1	23.4	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
59	Taxi	As Shown	2.7	1.9	37.7	26.0	0.4
		Opposite	1.0	0.7	12.4	8.4	0.2
60	Taxi	As Shown	0.0	0.0	3.1	1.6	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.0	0.1	6.2	3.2	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	0.0	0.1	6.4	3.3	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	10.2	5.9	145.3	96.6	0.8
64	Taxi	As Shown	6.2	3.9	0.7	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
65a	Taxi	As Shown	0.0	0.3	25.2	13.0	1.1
	Queue: Taxi/Idle	Opposite	7.2	4.0	126.5	81.0	0.6
65b	Taxi	As Shown	0.0	0.2	18.9	9.7	0.8
		Opposite	0.4	0.1	33.3	18.6	0.0
66	Taxi	As Shown	6.3	4.1	16.3	7.7	0.0
		Opposite	1.6	1.1	0.3	0.0	0.0
67	Taxi	As Shown	6.1	4.2	19.8	9.7	0.8
	Queue: Taxi/Idle	Opposite	2.0	1.2	19.1	11.5	0.0
68	Taxi	As Shown	0.2	0.1	15.4	7.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Taxi	As Shown	6.2	4.2	35.2	17.4	0.8
		Opposite	0.4	0.3	0.1	0.0	0.0
70	Taxi	As Shown	0.4	0.3	15.1	11.0	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	3.0	2.2	37.3	25.3	0.6
		Opposite	7.0	4.9	65.0	42.8	1.1
72	Taxi	As Shown	1.8	0.9	33.4	18.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	2.8	1.9	37.2	25.3	0.6
		Opposite	0.0	0.0	0.0	0.0	0.0
74	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.3	0.8	0.1	0.0	0.0
75	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
76	Queue: Taxi/Idle	As Shown	18.2	10.2	183.2	158.0	1.2
	Taxi	Opposite	1.3	0.8	0.1	0.0	0.0
77	Taxi	As Shown	6.0	3.1	6.5	81.0	0.0
		Opposite	4.0	2.2	40.0	70.9	0.6
78	Queue: Taxi/Idle	As Shown	23.9	14.0	290.1	202.9	2.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
79	Taxi	As Shown	4.2	1.9	4.5	46.8	0.0
	Queue: Taxi/Idle	Opposite	21.6	12.6	247.2	175.0	1.7
80	Taxi	As Shown	9.9	5.1	10.8	135.0	0.0
		Opposite	6.7	3.6	66.7	118.2	1.0
81	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.6	0.1	53.7	14.8	0.0
82	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.2	0.8	18.6	6.3	0.0
83	Taxi	As Shown	7.6	4.0	92.8	46.6	0.6
		Opposite	0.0	0.0	0.0	0.0	0.0
84	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.2	0.0	0.0	0.0	0.0
85	Taxi	As Shown	7.6	4.0	92.8	46.6	0.6

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.2	0.8	18.6	6.3	0.0
87	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
88	Taxi	As Shown	3.4	2.4	19.9	27.6	4.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.2	0.8	18.6	6.3	0.0
90	Taxi	As Shown	0.5	0.3	9.0	2.8	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
91	Taxi	As Shown	0.5	0.3	9.0	2.0	0.0
		Opposite	0.7	0.2	0.5	6.4	0.0
92	Taxi	As Shown	1.5	0.5	1.1	12.7	0.0
		Opposite	1.0	0.6	18.0	4.1	0.0
93	Taxi	As Shown	0.5	0.3	9.0	2.0	0.0
		Opposite	0.7	0.2	0.5	6.4	0.0
94	Taxi	As Shown	1.6	0.9	5.1	14.5	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Taxi	As Shown	2.6	1.5	23.2	14.5	0.0
		Opposite	1.5	0.5	1.1	12.7	0.0
96	Taxi	As Shown	2.4	1.3	23.6	16.2	0.1
		Opposite	0.0	0.0	0.0	2.4	0.4
97	Taxi	As Shown	0.0	0.0	0.0	7.2	1.3
		Opposite	0.0	0.0	0.0	0.0	0.0
98	Taxi	As Shown	2.2	0.7	1.6	19.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
99	Queue: Taxi/Idle	As Shown	29.7	17.3	359.3	248.0	2.3
	Taxi	Opposite	0.0	0.0	0.0	1.7	0.3
100	Taxi	As Shown	0.1	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
101	Taxi	As Shown	0.0	0.0	0.0	2.3	0.4
		Opposite	3.1	1.5	24.2	22.5	0.1
102	Taxi	As Shown	0.0	0.0	0.0	4.6	0.9
		Opposite	4.8	2.5	47.2	32.3	0.3
103	Taxi	As Shown	10.7	4.2	90.6	60.2	0.0
	Queue: Taxi/Idle	Opposite	0.7	0.4	6.6	8.6	0.4
104	Taxi	As Shown	7.1	2.8	60.4	40.1	0.0
		Opposite	4.4	2.3	43.3	32.4	0.7
105	Taxi	As Shown	15.9	8.0	133.6	83.7	0.0
		Opposite	6.5	3.4	65.0	48.6	1.0
106	Taxi	As Shown	35.9	20.1	300.4	181.9	0.0
		Opposite	10.9	5.7	108.3	81.0	1.7
107	Taxi	As Shown	3.7	2.7	31.1	16.9	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	3.5	2.5	28.7	15.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Taxi	As Shown	0.0	0.0	0.0	0.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
110	Taxi	As Shown	0.0	0.0	0.0	33.7	4.0
		Opposite	1.3	0.7	11.8	9.8	0.3
111	Taxi	As Shown	0.0	0.0	0.0	29.7	3.4
		Opposite	1.3	0.7	11.8	9.8	0.3
112	Taxi	As Shown	0.4	0.2	3.9	3.3	0.1
		Opposite	0.0	0.0	0.0	0.9	0.1
113	Taxi	As Shown	0.0	0.0	0.0	4.6	0.9
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	10.7	4.2	90.6	60.2	0.0
	Queue: Taxi/Idle	Opposite	0.3	0.1	2.7	2.1	0.0
115	Taxi	As Shown	0.0	0.0	0.0	8.9	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
116	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117a	Taxi	As Shown	14.3	5.6	120.7	88.6	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
117b	Taxi	As Shown	10.7	4.2	90.6	66.5	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
117c	Taxi	As Shown	14.3	5.6	120.7	88.6	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
118	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
119	Taxi	As Shown	1.5	1.1	24.8	16.9	0.4
		Opposite	2.1	0.9	2.3	23.4	0.0
120	Taxi	As Shown	1.3	0.7	43.3	9.1	0.0
		Opposite	1.1	0.4	2.1	32.3	0.0
121a	Taxi	As Shown	0.4	0.4	31.7	21.0	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
121b	Taxi	As Shown	0.4	0.4	31.7	21.0	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	1.7	0.3
123	Queue: Taxi/Idle	As Shown	29.7	17.3	359.3	248.0	2.3
	Taxi	Opposite	0.7	0.2	0.5	6.4	0.0
124	Taxi	As Shown	0.8	0.5	0.1	0.0	0.0
		Opposite	1.8	1.0	13.3	15.1	0.0
W1	Gate: Taxi/Idle	As Shown	4.0	2.0	103.8	18.1	0.2
		Opposite	4.0	2.0	103.8	18.1	0.2
W2	Gate: Taxi/Idle	As Shown	5.0	2.4	157.1	18.1	0.2

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
W3	Gate: Taxi/Idle	Opposite	5.8	3.1	166.4	26.7	0.8
		As Shown	6.7	3.4	214.2	26.7	0.8
		Opposite	5.8	2.8	204.8	18.1	0.2
W4	Gate: Taxi/Idle	As Shown	10.5	5.7	316.0	58.6	1.2
		Opposite	13.2	5.4	261.7	130.6	0.2
S1	Gate: Taxi/Idle	As Shown	35.2	19.1	482.1	300.5	2.6
		Opposite	21.6	15.3	531.9	230.7	0.3
S2	Gate: Taxi/Idle	As Shown	24.5	16.0	400.5	263.2	1.7
		Opposite	13.8	12.4	333.0	221.3	0.3
S3E1	Gate: Taxi/Idle	As Shown	26.0	16.6	274.0	175.4	0.4
		Opposite	34.0	20.7	355.6	249.2	4.0
E2	Gate: Taxi/Idle	As Shown	10.7	2.5	28.4	8.4	0.0
		Opposite	17.2	7.5	197.8	160.3	2.1
E3	Gate: Taxi/Idle	As Shown	6.7	1.7	22.4	7.6	0.0
		Opposite	10.0	4.3	107.2	83.5	1.1
E4	Gate: Taxi/Idle	As Shown	3.5	0.9	12.5	5.1	0.0
		Opposite	3.5	0.9	12.5	5.1	0.0
C1	Gate: Taxi/Idle	As Shown	5.4	3.6	4.5	2.5	0.0
		Opposite	5.4	3.6	4.5	2.5	0.0
C2	Gate: Taxi/Idle	As Shown	4.6	3.1	4.2	2.5	0.0
		Opposite	4.6	3.1	4.2	2.5	0.0
G1	Gate: Taxi/Idle	As Shown	1.0	0.6	12.9	40.9	3.7
		Opposite	1.0	0.6	12.9	40.9	3.7
J1	Gate: Taxi/Idle	As Shown	9.5	4.3	42.1	92.3	0.2
		Opposite	18.0	8.9	157.1	135.4	0.9
J2	Gate: Taxi/Idle	As Shown	13.5	6.6	103.3	201.3	0.3
		Opposite	13.0	6.5	49.5	186.5	0.2
APUC1	APU	As Shown	432.4	287.2	62.3	0.0	0.0
		Opposite	432.4	287.2	62.3	0.0	0.0
APUC2	APU	As Shown	432.4	287.2	62.3	0.0	0.0
		Opposite	432.4	287.2	62.3	0.0	0.0
RUGRE	Run-up	As Shown	0.1	0.0	4.0	0.2	0.3
RU9	Run-up	South	0.1	0.1	0.1	0.0	0.0
		West	0.1	0.1	0.2	0.0	0.0
		East	0.1	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.3	0.0	0.0
RU32	Run-up	South	0.0	0.0	0.0	0.0	0.0
		West	0.0	0.0	0.0	0.0	0.0
		East	0.0	0.0	0.0	0.0	0.0
		North	0.0	0.0	0.0	0.0	0.0

Table C.4 Build Out (2013) Alternative C: Night

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Taxi	As Shown	0.0	0.0	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
2	Taxi	As Shown	0.0	0.1	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
3	Taxi	As Shown	0.1	0.1	0.5	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	0.0	0.1	0.1	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
5	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
6	Taxi	As Shown	0.1	0.1	0.1	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
7a	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
7b	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
9	Taxi	As Shown	0.1	0.2	0.1	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
11	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
14	Taxi	As Shown	0.0	0.1	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
15	Taxi	As Shown	0.0	0.0	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.2	0.4	1.9	1.2	0.0
		Opposite	0.1	0.1	0.3	0.5	0.0
17	Taxi	As Shown	1.0	1.0	1.7	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Queue: Taxi/Idle	As Shown	0.3	0.5	2.4	1.5	0.0
	Taxi	Opposite	0.0	0.0	0.1	0.0	0.0
19	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.0	0.0	0.0
20	Taxi	As Shown	0.0	0.1	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
21	Taxi	As Shown	0.2	0.3	1.4	1.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
22	Queue: Taxi/Idle	As Shown	3.8	4.9	13.6	3.4	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.1	0.1	2.2	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Queue: Taxi/Idle	As Shown	2.8	3.6	10.3	2.3	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
26	Queue: Taxi/Idle	As Shown	3.1	4.0	14.3	3.9	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	0.2	0.3	1.4	1.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	0.2	0.2	4.1	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	0.1	0.2	1.0	0.9	0.0
		Opposite	0.1	0.1	0.0	0.0	0.0
30	Queue: Taxi/Idle	As Shown	0.4	1.0	4.5	1.6	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
31	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
32	Queue: Taxi/Idle	As Shown	2.2	2.9	6.4	1.5	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
33	Queue: Taxi/Idle	As Shown	2.1	2.8	6.4	1.5	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
34	Taxi	As Shown	1.1	1.7	1.4	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	6.3	8.0	12.8	1.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
36	Taxi	As Shown	7.0	8.6	17.0	2.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.8	1.2	0.9	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.0	0.1	0.0	0.0	0.0
		Opposite	0.2	0.3	0.0	0.0	0.0
39	Taxi	As Shown	2.3	3.7	2.8	1.1	0.0
		Opposite	0.5	0.8	0.0	0.0	0.0
40	Taxi	As Shown	0.2	0.3	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.3	0.4	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
42	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
43	Queue: Taxi/Idle	As Shown	0.0	0.0	0.0	0.0	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
44	Queue: Taxi/Idle	As Shown	0.0	0.0	0.0	0.0	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
46	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
47	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
49	Taxi	As Shown	0.2	0.3	0.0	0.1	0.0
		Opposite	0.8	1.2	0.9	0.4	0.0
50	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	2.7	4.3	3.3	1.3	0.0
		Opposite	0.6	1.0	0.3	0.7	0.0
52	Taxi	As Shown	0.9	1.4	2.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
53	Taxi	As Shown	1.6	1.5	4.4	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	0.4	0.6	2.8	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
55	Taxi	As Shown	0.3	0.7	1.9	0.2	0.0
		Opposite	1.4	1.2	0.3	0.7	0.0
56	Taxi	As Shown	0.4	0.4	0.4	0.3	0.0
		Opposite	0.0	0.0	0.1	0.1	0.0
57	Taxi	As Shown	1.4	1.7	3.0	0.7	0.0
		Opposite	1.0	0.8	0.2	0.5	0.0
58	Taxi	As Shown	0.0	0.1	0.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
59	Taxi	As Shown	0.4	0.6	0.5	0.2	0.0
		Opposite	0.1	0.1	0.0	0.1	0.0
60	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.4	0.1	0.0
64	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
65a	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
		As Shown	0.0	0.0	0.0	0.0	0.0
		Queue: Taxi/Idle	Opposite	0.0	0.0	0.6	0.1
65b	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.5	0.1	0.0
66	Taxi	As Shown	1.1	1.7	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
67	Taxi	As Shown	1.1	1.7	0.0	0.0	0.0
		Queue: Taxi/Idle	Opposite	0.0	0.0	0.2	0.1
68	Taxi	As Shown	0.0	0.0	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Taxi	As Shown	1.1	1.7	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
70	Taxi	As Shown	0.0	0.0	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.3	0.4	0.1	0.3	0.0
		Opposite	1.1	1.8	0.7	0.3	0.0
72	Taxi	As Shown	0.0	0.0	0.5	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	0.3	0.4	0.1	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
74	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
75	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
76	Queue: Taxi/Idle	As Shown	6.7	8.1	15.2	4.3	0.2
		Taxi	Opposite	0.0	0.0	0.0	0.0
77	Taxi	As Shown	0.0	0.1	0.1	0.6	0.0
		Opposite	0.4	0.4	0.3	1.3	0.0
78	Queue: Taxi/Idle	As Shown	9.0	11.6	24.4	5.9	0.2
		Taxi	Opposite	0.0	0.0	0.0	0.0
79	Taxi	As Shown	1.9	1.6	0.3	1.0	0.0
		Queue: Taxi/Idle	Opposite	7.8	9.9	21.0	5.1
80	Taxi	As Shown	0.1	0.2	0.1	1.1	0.0
		Opposite	0.6	0.7	0.5	2.1	0.0
81	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.7	0.1	0.0
82	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.6	0.1	0.0
83	Taxi	As Shown	0.5	0.5	0.4	0.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
84	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
85	Taxi	As Shown	0.5	0.5	0.4	0.7	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.6	0.1	0.0
87	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
88	Taxi	As Shown	0.1	0.0	0.7	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.6	0.1	0.0
90	Taxi	As Shown	0.0	0.0	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
91	Taxi	As Shown	0.0	0.0	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
92	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.6	0.0	0.0
93	Taxi	As Shown	0.0	0.0	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
94	Taxi	As Shown	0.0	0.0	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Taxi	As Shown	0.1	0.0	0.8	0.1	0.0
		Opposite	0.0	0.0	0.0	0.2	0.0
96	Taxi	As Shown	0.0	0.0	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
97	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
98	Taxi	As Shown	0.1	0.0	0.1	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
99	Queue: Taxi/Idle	As Shown	2.3	3.0	7.5	1.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
101	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.1	0.2	0.0
102	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.2	0.3	0.0
103	Taxi	As Shown	0.2	0.3	1.1	0.2	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.0	0.1	0.0
104	Taxi	As Shown	0.1	0.2	0.7	0.1	0.0
		Opposite	0.0	0.1	0.1	0.3	0.0
105	Taxi	As Shown	0.2	0.3	1.3	0.5	0.0
		Opposite	0.0	0.1	0.2	0.4	0.0
106	Taxi	As Shown	0.3	0.5	2.4	1.5	0.0
		Opposite	0.1	0.2	0.4	0.6	0.0
107	Taxi	As Shown	0.0	0.0	0.1	0.3	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	0.0	0.0	0.1	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
110	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
111	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
112	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.2	0.3	1.1	0.2	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.0	0.0	0.0
115	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
116	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117a	Taxi	As Shown	0.2	0.4	1.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117b	Taxi	As Shown	0.2	0.3	1.1	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117c	Taxi	As Shown	0.2	0.4	1.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
118	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
119	Taxi	As Shown	0.0	0.0	0.1	0.2	0.0
		Opposite	1.0	0.8	0.2	0.5	0.0
120	Taxi	As Shown	0.2	0.1	1.6	0.1	0.0
		Opposite	0.0	0.1	0.1	0.6	0.0
121a	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
121b	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	2.3	3.0	7.5	1.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.1	0.0
124	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.5	0.2	0.0
W1	Gate: Taxi/Idle	As Shown	0.5	0.6	3.6	0.2	0.0
		Opposite	0.5	0.6	3.6	0.2	0.0
W2	Gate: Taxi/Idle	As Shown	0.7	0.8	5.4	0.2	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out (2013) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.7	0.8	5.7	0.3	0.0
W3	Gate: Taxi/Idle	As Shown	0.9	1.0	7.3	0.3	0.0
		Opposite	0.9	1.0	7.0	0.2	0.0
W4	Gate: Taxi/Idle	As Shown	1.1	1.2	10.3	0.6	0.0
		Opposite	1.2	1.5	9.0	2.2	0.0
S1	Gate: Taxi/Idle	As Shown	6.4	6.3	12.7	3.4	0.0
		Opposite	3.4	6.3	26.6	3.6	0.0
S2	Gate: Taxi/Idle	As Shown	4.1	4.5	10.9	3.2	0.0
		Opposite	1.2	3.2	11.8	3.3	0.0
S3E1	Gate: Taxi/Idle	As Shown	1.5	2.4	8.9	2.5	0.0
		Opposite	1.4	2.4	8.4	3.2	0.0
E2	Gate: Taxi/Idle	As Shown	1.2	0.6	1.0	0.1	0.0
		Opposite	1.3	1.5	7.6	2.8	0.0
E3	Gate: Taxi/Idle	As Shown	0.7	0.4	0.8	0.1	0.0
		Opposite	0.7	1.0	4.1	1.4	0.0
E4	Gate: Taxi/Idle	As Shown	0.3	0.2	0.4	0.1	0.0
		Opposite	0.3	0.2	0.4	0.1	0.0
C1	Gate: Taxi/Idle	As Shown	0.8	1.2	0.1	0.0	0.0
		Opposite	0.8	1.2	0.1	0.0	0.0
C2	Gate: Taxi/Idle	As Shown	0.2	0.4	0.1	0.0	0.0
		Opposite	0.2	0.4	0.1	0.0	0.0
G1	Gate: Taxi/Idle	As Shown	0.1	0.2	0.4	0.5	0.0
		Opposite	0.1	0.2	0.4	0.5	0.0
J1	Gate: Taxi/Idle	As Shown	0.8	0.8	1.3	1.2	0.0
		Opposite	0.8	0.9	1.7	1.5	0.0
J2	Gate: Taxi/Idle	As Shown	1.9	1.9	2.3	2.5	0.0
		Opposite	1.9	1.9	1.6	2.5	0.0
APUC1	APU	As Shown	94.8	141.3	3.3	0.0	0.0
		Opposite	94.8	141.3	3.3	0.0	0.0
APUC2	APU	As Shown	94.8	141.3	3.3	0.0	0.0
		Opposite	94.8	141.3	3.3	0.0	0.0
RUGRE	Run-up	As Shown	0.2	0.1	25.4	2.6	2.6
RU9	Run-up	South	0.3	0.2	2.3	0.0	0.0
		West	0.3	0.2	2.0	0.0	0.0
		East	0.2	0.0	0.9	0.0	0.0
		North	0.4	0.3	3.7	0.0	0.1
RU32	Run-up	South	0.1	0.0	0.3	0.0	0.0
		West	0.1	0.1	0.4	0.0	0.0
		East	0.0	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.4	0.0	0.1

Table C.5 Build Out+5 (2018) Alternative A: Day

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Queue: Taxi/Idle	As Shown	32.7	16.2	292.6	155.2	1.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
2	Queue: Taxi/Idle	As Shown	26.6	13.2	235.1	124.7	0.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
3	Queue: Taxi/Idle	As Shown	9.2	5.1	64.8	34.6	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	2.1	1.4	4.9	3.9	0.1
		Opposite	0.1	0.0	0.0	0.9	0.1
5	Taxi	As Shown	0.0	0.0	0.0	0.4	0.0
		Opposite	0.0	0.0	0.0	0.6	0.0
6	Taxi	As Shown	0.1	0.0	0.0	1.3	0.1
		Opposite	0.0	0.0	0.0	1.8	0.0
7	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	1.2	0.0
		Opposite	0.1	0.0	0.0	0.9	0.1
9	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.4	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.0	1.3	0.1
11	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Queue: Taxi/Idle	As Shown	4.5	2.2	41.3	24.9	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	1.1	1.2	0.0
14	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	1.2	1.4	0.0
15	Taxi	As Shown	0.2	0.2	0.9	1.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.1	0.1	1.1	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
17	Taxi	As Shown	0.2	0.2	1.6	1.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Taxi	As Shown	0.2	0.2	0.0	14.1	0.8
		Opposite	0.7	0.5	0.0	18.6	1.0
19	Taxi	As Shown	0.4	0.3	0.0	21.2	1.1
		Opposite	1.0	0.7	0.0	28.0	1.5
20	Taxi	As Shown	0.2	0.2	0.0	14.1	0.8
		Opposite	0.7	0.5	0.0	18.6	1.0
21	Taxi	As Shown	0.3	0.2	0.0	9.3	0.5

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.1	0.1	0.0	4.3	0.2
22	Taxi	As Shown	0.1	0.1	0.0	4.9	0.3
		Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.3	0.2	0.0	9.3	0.5
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	0.0	8.3	0.4
26	Queue: Taxi/Idle	As Shown	28.5	16.6	180.5	100.6	0.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	6.0	3.7	34.1	28.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	6.0	3.7	34.1	28.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	11.9	7.3	58.7	54.7	0.4
		Opposite	0.1	0.0	8.8	0.3	0.0
30	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.6	0.7	0.0
31	Taxi	As Shown	11.8	7.2	58.7	53.4	0.4
		Opposite	0.1	0.1	10.0	0.3	0.0
34	Taxi	As Shown	9.2	5.9	62.1	74.9	1.1
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	0.1	0.0	0.0	1.3	0.1
		Opposite	0.0	0.0	0.0	1.8	0.0
36	Taxi	As Shown	0.0	0.0	0.0	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.1	0.1	0.0	4.3	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.1	0.0	0.0	1.5	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
42	Queue: Taxi/Idle	As Shown	79.8	39.0	777.5	419.0	2.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.2	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Queue: Taxi/Idle	As Shown	80.0	39.4	790.7	423.8	2.7
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
49	Queue: Taxi/Idle	As Shown	53.2	26.0	520.6	278.1	1.7
	Taxi	Opposite	0.3	0.3	13.4	8.1	0.1
50	Queue: Taxi/Idle	As Shown	53.3	26.2	518.0	277.0	1.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	0.5	0.7	26.7	16.1	0.1

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
52	Queue: Taxi/Idle	As Shown	44.1	20.4	361.7	191.7	1.2
	Taxi	Opposite	0.3	0.3	12.6	7.5	0.1
53	Queue: Taxi/Idle	As Shown	48.6	24.0	424.3	229.4	1.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	1.8	0.7	8.6	4.6	0.0
		Opposite	1.0	0.1	0.4	0.0	0.0
55	Taxi	As Shown	10.1	6.1	80.3	47.6	0.3
		Opposite	0.8	0.4	0.0	0.0	0.0
56	Taxi	As Shown	3.4	0.9	0.1	0.0	0.0
		Opposite	0.3	0.3	12.6	7.5	0.1
57	Taxi	As Shown	2.2	0.8	8.7	4.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
58	Taxi	As Shown	4.3	1.7	12.3	5.5	0.0
		Opposite	2.8	1.8	28.4	20.5	0.2
59	Taxi	As Shown	2.8	1.1	10.1	5.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.1	0.1	0.0	6.8	0.4
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	18.0	6.1	1.0	0.1	0.0
		Opposite	0.5	0.1	0.0	0.0	0.0
63	Taxi	As Shown	0.1	0.2	3.1	1.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
64	Taxi	As Shown	0.1	0.1	2.8	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
65	Taxi	As Shown	0.1	0.1	4.2	1.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
66	Taxi	As Shown	14.7	5.3	12.6	5.2	0.1
		Opposite	0.4	0.1	0.0	0.0	0.0
67	Queue: Taxi/Idle	As Shown	10.1	4.4	59.3	31.3	0.2
	Taxi	Opposite	0.9	0.7	0.2	0.0	0.0
68	Taxi	As Shown	1.7	1.5	6.3	2.6	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Queue: Taxi/Idle	As Shown	12.9	4.5	59.3	31.3	0.2
	Taxi	Opposite	1.2	1.0	0.2	0.0	0.0
70	Taxi	As Shown	9.2	1.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.3	0.0	2.3	1.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
72	Taxi	As Shown	1.7	1.5	6.3	2.6	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	6.7	0.9	0.1	0.0	0.0
		Opposite	0.6	0.1	4.6	3.4	0.0
74	Taxi	As Shown	2.3	0.5	0.1	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.3	0.0	2.3	1.7	0.0
75	Taxi	As Shown	2.7	0.3	0.0	0.0	0.0
		Opposite	0.7	0.3	0.1	0.0	0.0
76	Taxi	As Shown	4.1	0.4	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
77	Taxi	As Shown	2.3	0.5	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
78	Taxi	As Shown	0.6	0.2	5.7	3.0	0.0
	Queue: Taxi/Idle	Opposite	2.3	0.6	0.3	0.1	0.0
79	Taxi	As Shown	1.7	0.7	17.2	8.9	0.1
		Opposite	6.8	1.7	0.9	0.4	0.0
80	Taxi	As Shown	1.0	0.3	9.3	5.3	0.0
		Opposite	1.7	0.2	0.0	0.0	0.0
81	Taxi	As Shown	3.1	1.1	30.0	16.6	0.1
		Opposite	4.6	1.1	0.6	0.3	0.0
82	Taxi	As Shown	1.7	1.1	11.3	5.5	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
83	Taxi	As Shown	2.5	1.2	10.9	11.0	0.0
		Opposite	3.1	0.9	15.3	7.8	0.0
84	Taxi	As Shown	6.7	3.0	19.9	0.4	0.0
		Opposite	1.8	0.8	0.1	0.0	0.0
85	Taxi	As Shown	0.9	0.4	7.7	4.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	12.8	6.2	41.8	9.8	0.0
		Opposite	2.7	1.2	0.2	0.0	0.0
88	Taxi	As Shown	0.0	0.0	0.0	1.8	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.2	0.1	6.9	4.5	0.0
		Opposite	0.4	0.4	3.2	3.0	0.0
91	Taxi	As Shown	3.4	0.4	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
92	Taxi	As Shown	0.4	0.1	9.2	11.0	0.0
		Opposite	3.5	0.9	23.5	8.0	0.0
93	Taxi	As Shown	0.7	0.3	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Queue: Taxi/Idle	As Shown	21.2	10.2	230.3	110.7	0.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
96	Taxi	As Shown	1.2	0.5	18.0	4.3	0.1
		Opposite	2.6	0.5	19.5	8.7	0.0
97	Queue: Taxi/Idle	As Shown	68.5	32.1	667.2	344.7	2.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Queue: Taxi/Idle	As Shown	67.7	32.1	677.6	345.9	2.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
103	Queue: Taxi/Idle	As Shown	22.6	10.3	254.0	121.5	0.6

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
104	Taxi	As Shown	0.1	0.1	4.9	4.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
105	Taxi	As Shown	0.8	0.1	6.3	4.3	0.0
		Opposite	0.7	0.3	14.2	6.7	0.0
106	Taxi	As Shown	0.8	0.1	6.0	3.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	0.3	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Queue: Taxi/Idle	As Shown	21.2	9.8	226.3	109.0	0.6
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
112	Taxi	As Shown	3.1	1.8	84.7	27.2	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	1.0	0.7	41.8	14.4	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.4	0.1	2.9	2.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
115	Taxi	As Shown	0.5	0.2	10.9	3.4	0.0
		Opposite	0.3	0.5	27.2	10.2	0.1
116	Taxi	As Shown	4.2	2.2	85.8	25.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
117	Taxi	As Shown	0.5	0.2	10.9	3.4	0.0
		Opposite	0.3	0.5	27.2	10.2	0.1
118	Queue: Taxi/Idle	As Shown	4.6	2.1	39.0	20.7	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
119	Queue: Taxi/Idle	As Shown	4.4	2.5	66.2	30.9	0.2
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
120	Queue: Taxi/Idle	As Shown	16.9	8.5	183.2	92.8	0.6
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
121	Taxi	As Shown	1.7	0.4	21.7	6.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	1.0	0.7	4.2	1.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	46.7	22.6	489.7	244.8	1.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
124	Taxi	As Shown	0.8	0.4	11.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
127	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	1.6	0.6	38.4	12.0	0.0
128	Taxi	As Shown	5.9	3.4	55.5	25.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
129	Taxi	As Shown	2.9	1.3	40.5	22.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
130	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
131	Taxi	As Shown	1.1	0.7	8.9	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
132	Taxi	As Shown	1.0	0.6	7.9	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
133	Queue: Taxi/Idle	As Shown	17.9	9.2	187.3	94.8	0.6
	Taxi	Opposite	1.0	0.6	7.9	1.2	0.0
134	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.9	0.1	0.0	0.0	0.0
135	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
136	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
137	Taxi	As Shown	0.0	0.0	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
138	Taxi	As Shown	2.0	1.4	4.9	2.7	0.1
		Opposite	0.0	0.0	0.0	0.3	0.0
140	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	1.0	0.7	2.4	1.4	0.0
141	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.0	0.0	0.0
142	Taxi	As Shown	0.9	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
143	Taxi	As Shown	1.4	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
144	Queue: Taxi/Idle	As Shown	9.3	4.3	83.2	44.1	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
145	Taxi	As Shown	1.0	0.7	2.4	2.0	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
146	Taxi	As Shown	2.0	1.4	4.9	2.7	0.1
		Opposite	0.1	0.0	0.0	0.3	0.0
147	Taxi	As Shown	0.1	0.0	0.0	2.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
148	Taxi	As Shown	2.0	1.4	4.9	2.7	0.1
		Opposite	0.1	0.0	0.0	0.3	0.0
149	Taxi	As Shown	0.1	0.1	7.5	4.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
150	Taxi	As Shown	0.3	0.3	12.6	7.5	0.1
		Opposite	1.9	0.2	0.0	0.4	0.0
151	Taxi	As Shown	0.4	0.6	12.6	7.5	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
152	Taxi	As Shown	0.8	0.4	11.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
153	Taxi	As Shown	1.3	0.9	5.7	2.3	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
W1	Gate: Taxi/Idle	As Shown	12.0	5.4	155.1	34.4	0.2
		Opposite	24.9	13.5	229.7	114.1	0.8
W2	Gate: Taxi/Idle	As Shown	15.0	6.3	229.5	37.9	0.2
		Opposite	17.3	7.3	253.8	76.6	0.7
W3	Gate: Taxi/Idle	As Shown	20.0	8.9	326.5	100.1	0.7
		Opposite	16.8	6.7	277.9	42.0	0.2
W4	Gate: Taxi/Idle	As Shown	36.4	14.6	451.7	246.2	1.9
		Opposite	22.0	7.5	298.7	69.6	0.4
S1	Gate: Taxi/Idle	As Shown	43.0	16.0	418.8	261.8	1.5
		Opposite	34.6	16.7	513.0	241.2	0.5
S2	Gate: Taxi/Idle	As Shown	32.3	15.9	362.3	269.6	0.9
		Opposite	21.5	14.8	387.3	257.7	0.5
S3E1	Gate: Taxi/Idle	As Shown	36.6	20.7	248.7	194.9	1.1
		Opposite	41.1	23.9	255.1	224.9	2.6
E2	Gate: Taxi/Idle	As Shown	30.8	10.5	198.7	108.0	0.6
		Opposite	29.4	13.5	335.8	228.3	1.4
E3	Gate: Taxi/Idle	As Shown	16.7	5.9	89.8	45.9	0.3
		Opposite	17.0	7.0	134.8	81.7	0.0
C1a	Gate: Taxi/Idle	As Shown	1.6	0.7	3.1	1.6	0.0
		Opposite	1.6	0.7	3.1	1.6	0.0
C1b	Gate: Taxi/Idle	As Shown	1.6	0.7	3.1	1.6	0.0
		Opposite	1.6	0.7	3.1	1.6	0.0
C2a	Gate: Taxi/Idle	As Shown	6.6	3.0	3.6	1.6	0.0
		Opposite	6.6	3.0	3.6	1.6	0.0
C2b	Gate: Taxi/Idle	As Shown	6.6	3.0	3.6	1.6	0.0
		Opposite	6.6	3.0	3.6	1.6	0.0
G1	Gate: Taxi/Idle	As Shown	2.5	1.2	23.4	40.1	1.7
		Opposite	2.5	1.2	23.4	40.1	1.7
K1	Gate: Taxi/Idle	As Shown	1.0	0.6	1.9	2.8	0.0
		Opposite	1.0	0.6	1.9	1.0	0.0
APUK1	APU	As Shown	89.1	65.7	0.0	0.0	0.0
		Opposite	89.1	65.7	0.0	0.0	0.0
APUC1a	APU	As Shown	199.5	117.9	29.5	0.0	0.0
		Opposite	199.5	117.9	29.5	0.0	0.0
APUC1b	APU	As Shown	199.5	117.9	29.5	0.0	0.0
		Opposite	199.5	117.9	29.5	0.0	0.0
APUC2a	APU	As Shown	199.5	117.9	29.5	0.0	0.0
		Opposite	199.5	117.9	29.5	0.0	0.0
APUC2b	APU	As Shown	199.5	117.9	29.5	0.0	0.0
		Opposite	199.5	117.9	29.5	0.0	0.0
RUGRE	Run-up	As Shown	0.0	0.0	3.5	0.2	0.3
RU9	Run-up	South	0.1	0.0	0.1	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
RU32		West	0.1	0.1	0.2	0.0	0.0
		East	0.1	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.2	0.0	0.0
	Run-up	South	0.0	0.0	0.0	0.0	0.0
		West	0.0	0.0	0.0	0.0	0.0
		East	0.0	0.0	0.0	0.0	0.0
		North	0.0	0.0	0.0	0.0	0.0

Table C.6 Build Out+5 (2018) Alternative A: Night

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Queue: Taxi/Idle	As Shown	19.8	23.0	65.6	21.7	0.6
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
2	Queue: Taxi/Idle	As Shown	15.9	18.4	52.5	17.4	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
3	Queue: Taxi/Idle	As Shown	4.8	5.0	13.4	4.5	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	0.6	0.3	0.2	0.2	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
5	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
6	Taxi	As Shown	0.0	0.1	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.2	0.1
7	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
9	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.1	0.0
11	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Queue: Taxi/Idle	As Shown	0.1	0.2	0.4	0.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.4	0.2	0.0
14	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.5	0.0	0.0
15	Taxi	As Shown	0.0	0.0	0.3	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.0	0.0	0.4	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
17	Taxi	As Shown	0.0	0.0	0.6	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Taxi	As Shown	0.0	0.1	0.0	0.5	0.1
		Opposite	0.2	0.3	0.0	1.2	0.0
19	Taxi	As Shown	0.1	0.1	0.0	0.8	0.1
		Opposite	0.3	0.5	0.0	1.7	0.0
20	Taxi	As Shown	0.0	0.1	0.0	0.5	0.1
		Opposite	0.2	0.3	0.0	1.2	0.0
21	Taxi	As Shown	0.1	0.2	0.0	0.6	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.2	0.0
22	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.1	0.2	0.0	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.4	0.1
26	Queue: Taxi/Idle	As Shown	1.8	1.8	6.7	3.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	0.3	0.4	1.8	1.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	0.3	0.4	1.8	1.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	0.7	0.7	2.8	2.8	0.1
		Opposite	0.0	0.0	0.5	0.0	0.0
30	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.2	0.0	0.0
31	Taxi	As Shown	0.6	0.7	2.8	2.7	0.1
		Opposite	0.0	0.0	0.9	0.0	0.0
34	Taxi	As Shown	0.7	1.0	2.6	4.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	0.0	0.1	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.2	0.1
36	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
42	Queue: Taxi/Idle	As Shown	11.6	14.2	41.3	14.3	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.1	0.1	0.2	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Queue: Taxi/Idle	As Shown	11.7	14.7	42.5	14.6	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
49	Queue: Taxi/Idle	As Shown	7.7	9.5	27.7	9.5	0.2
	Taxi	Opposite	0.0	0.0	0.1	0.1	0.0
50	Queue: Taxi/Idle	As Shown	7.8	9.7	27.5	9.4	0.2
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	0.0	0.1	0.2	0.1	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
52	Queue: Taxi/Idle	As Shown	11.7	12.4	35.6	12.4	0.3
	Taxi	Opposite	0.0	0.1	0.1	0.1	0.0
53	Queue: Taxi/Idle	As Shown	13.4	14.8	42.5	15.5	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	0.2	0.3	1.0	0.1	0.0
		Opposite	0.4	0.0	0.1	0.0	0.0
55	Taxi	As Shown	3.3	3.6	10.3	4.9	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
56	Taxi	As Shown	0.8	0.6	0.7	0.4	0.0
		Opposite	0.0	0.1	0.1	0.1	0.0
57	Taxi	As Shown	0.3	0.4	1.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
58	Taxi	As Shown	0.9	1.2	1.4	0.2	0.0
		Opposite	0.8	1.0	3.2	2.0	0.0
59	Taxi	As Shown	0.4	0.5	1.2	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.0	0.0	0.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	4.1	3.2	3.6	1.9	0.0
		Opposite	0.0	0.2	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.1	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
64	Taxi	As Shown	0.0	0.0	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
65	Taxi	As Shown	0.0	0.0	0.3	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
66	Taxi	As Shown	3.3	2.7	3.7	1.5	0.0
		Opposite	0.0	0.2	0.0	0.0	0.0
67	Queue: Taxi/Idle	As Shown	1.6	1.6	3.2	1.2	0.0
	Taxi	Opposite	0.3	0.5	0.0	0.0	0.0
68	Taxi	As Shown	0.7	1.0	0.4	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Queue: Taxi/Idle	As Shown	2.8	2.6	3.3	1.1	0.0
	Taxi	Opposite	0.1	0.2	0.0	0.0	0.0
70	Taxi	As Shown	2.8	1.6	2.4	0.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.1	0.2	0.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
72	Taxi	As Shown	0.7	1.0	0.4	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	2.0	1.4	1.6	0.6	0.0
		Opposite	0.2	0.4	1.1	0.4	0.0
74	Taxi	As Shown	0.7	0.6	0.5	0.1	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.1	0.2	0.5	0.2	0.0
75	Taxi	As Shown	0.8	0.5	0.7	0.3	0.0
		Opposite	0.2	0.3	0.0	0.0	0.0
76	Taxi	As Shown	1.2	0.7	1.0	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
77	Taxi	As Shown	0.5	0.4	0.3	0.2	0.0
		Opposite	0.2	0.8	0.0	0.0	0.0
78	Taxi	As Shown	0.2	0.2	0.5	0.1	0.0
	Queue: Taxi/Idle	Opposite	15.7	19.0	51.9	17.2	0.4
79	Taxi	As Shown	0.5	0.7	1.6	0.3	0.0
		Opposite	2.3	4.0	2.9	0.8	0.0
80	Taxi	As Shown	0.3	0.4	1.2	0.3	0.0
		Opposite	0.5	0.3	0.5	0.1	0.0
81	Taxi	As Shown	0.9	1.3	3.5	0.9	0.0
		Opposite	1.6	2.7	1.9	0.6	0.0
82	Taxi	As Shown	0.6	0.8	1.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
83	Taxi	As Shown	0.8	1.3	1.4	0.5	0.0
		Opposite	0.8	1.4	1.5	0.3	0.0
84	Taxi	As Shown	2.3	2.4	3.3	0.1	0.0
		Opposite	0.2	0.4	0.0	0.0	0.0
85	Taxi	As Shown	0.3	0.4	0.7	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	4.3	4.8	6.6	1.4	0.0
		Opposite	0.4	0.5	0.0	0.0	0.0
88	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.1	0.1	0.7	0.2	0.0
		Opposite	0.1	0.2	0.5	0.4	0.0
91	Taxi	As Shown	1.0	0.6	0.9	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
92	Taxi	As Shown	0.1	0.3	1.2	0.5	0.0
		Opposite	1.1	1.4	2.9	0.4	0.0
93	Taxi	As Shown	0.2	0.3	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Queue: Taxi/Idle	As Shown	0.7	0.8	4.6	0.5	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
96	Taxi	As Shown	0.3	0.5	2.0	0.2	0.0
		Opposite	0.5	0.3	1.2	0.2	0.0
97	Queue: Taxi/Idle	As Shown	1.3	1.4	5.8	1.3	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Queue: Taxi/Idle	As Shown	1.1	1.5	6.8	1.5	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
103	Queue: Taxi/Idle	As Shown	0.5	0.8	4.8	0.9	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
104	Taxi	As Shown	0.0	0.0	0.2	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
105	Taxi	As Shown	0.2	0.4	1.5	0.5	0.0
		Opposite	0.0	0.0	0.5	0.1	0.0
106	Taxi	As Shown	0.2	0.4	1.4	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Queue: Taxi/Idle	As Shown	0.5	0.8	4.0	0.9	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
112	Taxi	As Shown	0.6	0.5	4.1	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	0.2	0.3	3.3	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.1	0.2	0.7	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
115	Taxi	As Shown	0.0	0.0	0.4	0.0	0.0
		Opposite	0.2	0.3	2.8	0.5	0.0
116	Taxi	As Shown	0.7	0.5	1.5	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117	Taxi	As Shown	0.0	0.0	0.4	0.0	0.0
		Opposite	0.2	0.3	2.8	0.5	0.0
118	Queue: Taxi/Idle	As Shown	0.2	0.3	0.5	0.2	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
119	Queue: Taxi/Idle	As Shown	0.3	0.4	3.3	0.6	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
120	Queue: Taxi/Idle	As Shown	0.8	0.9	4.8	1.1	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
121	Taxi	As Shown	0.1	0.1	0.8	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.3	0.2	0.3	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	0.0	0.0	0.2	0.1	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
124	Taxi	As Shown	0.1	0.0	0.5	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
127	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.1	1.1	0.4	0.0
128	Taxi	As Shown	0.3	0.4	1.7	1.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
129	Taxi	As Shown	0.1	0.3	1.1	0.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
130	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
131	Taxi	As Shown	0.1	0.0	0.4	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
132	Taxi	As Shown	0.1	0.0	0.3	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
133	Queue: Taxi/Idle	As Shown	1.1	1.1	5.1	1.2	0.0
	Taxi	Opposite	0.1	0.0	0.3	0.2	0.0
134	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.2	0.0	0.0	0.0
135	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
136	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
137	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
138	Taxi	As Shown	0.6	0.3	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
140	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.3	0.2	0.1	0.0	0.0
141	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
142	Taxi	As Shown	0.1	0.2	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
143	Taxi	As Shown	0.1	0.3	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
144	Queue: Taxi/Idle	As Shown	33.8	40.1	115.5	38.2	1.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
145	Taxi	As Shown	0.3	0.2	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
146	Taxi	As Shown	0.6	0.3	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
147	Taxi	As Shown	0.0	0.1	0.0	0.4	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
148	Taxi	As Shown	0.6	0.3	0.2	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
149	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
150	Taxi	As Shown	0.0	0.1	0.1	0.1	0.0
		Opposite	0.6	0.3	0.4	0.3	0.0
151	Taxi	As Shown	0.0	0.1	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
152	Taxi	As Shown	0.1	0.0	0.5	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
153	Taxi	As Shown	0.1	0.0	0.2	0.3	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
W1	Gate: Taxi/Idle	As Shown	1.7	1.7	9.8	1.2	0.0
		Opposite	2.4	2.6	12.2	5.2	0.1
W2	Gate: Taxi/Idle	As Shown	2.4	2.3	14.7	1.3	0.0
		Opposite	2.5	2.6	15.4	2.9	0.2
W3	Gate: Taxi/Idle	As Shown	3.9	3.7	21.8	3.2	0.2
		Opposite	3.0	2.9	19.0	1.3	0.0
W4	Gate: Taxi/Idle	As Shown	6.6	6.1	29.6	5.9	0.2
		Opposite	4.9	6.1	26.4	4.5	0.0
S1	Gate: Taxi/Idle	As Shown	7.9	8.9	29.2	10.9	0.1
		Opposite	8.8	12.3	45.3	10.8	0.0
S2	Gate: Taxi/Idle	As Shown	5.7	7.5	24.7	12.9	0.0
		Opposite	4.5	8.7	30.2	12.8	0.0
S3E1	Gate: Taxi/Idle	As Shown	4.6	5.6	16.1	9.5	0.1
		Opposite	5.2	6.5	16.6	11.5	0.1
E2	Gate: Taxi/Idle	As Shown	5.4	4.9	11.2	1.9	0.0
		Opposite	6.9	11.3	31.0	15.6	0.0
E3	Gate: Taxi/Idle	As Shown	3.4	2.6	4.0	0.7	0.0
		Opposite	4.0	5.0	12.3	5.5	0.0
C1a	Gate: Taxi/Idle	As Shown	0.4	1.1	0.1	0.0	0.0
		Opposite	0.4	1.1	0.1	0.0	0.0
C1b	Gate: Taxi/Idle	As Shown	0.4	1.1	0.1	0.0	0.0
		Opposite	0.4	1.1	0.1	0.0	0.0
C2a	Gate: Taxi/Idle	As Shown	1.6	1.9	0.1	0.0	0.0
		Opposite	1.6	1.9	0.1	0.0	0.0
C2b	Gate: Taxi/Idle	As Shown	1.6	1.9	0.1	0.0	0.0
		Opposite	1.6	1.9	0.1	0.0	0.0
G1	Gate: Taxi/Idle	As Shown	0.4	0.4	1.2	1.9	0.1
		Opposite	0.4	0.4	1.2	1.9	0.1
K1	Gate: Taxi/Idle	As Shown	0.2	0.4	0.1	0.3	0.1
		Opposite	0.2	0.4	0.1	0.0	0.0
APUK1	APU	As Shown	19.0	34.4	0.0	0.0	0.0
		Opposite	19.0	34.4	0.0	0.0	0.0
APUC1a	APU	As Shown	42.6	61.7	2.3	0.0	0.0
		Opposite	42.6	61.7	2.3	0.0	0.0
APUC1b	APU	As Shown	42.6	61.7	2.3	0.0	0.0
		Opposite	42.6	61.7	2.3	0.0	0.0
APUC2a	APU	As Shown	42.6	61.7	2.3	0.0	0.0
		Opposite	42.6	61.7	2.3	0.0	0.0
APUC2b	APU	As Shown	42.6	61.7	2.3	0.0	0.0
		Opposite	42.6	61.7	2.3	0.0	0.0
RUGRE	Run-up	As Shown	0.1	0.1	22.1	2.2	2.3
RU9	Run-up	South	0.2	0.2	2.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative A: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
RU32		West	0.2	0.1	1.7	0.0	0.0
		East	0.1	0.0	0.8	0.0	0.0
		North	0.4	0.3	3.2	0.0	0.1
	Run-up	South	0.0	0.0	0.2	0.0	0.0
		West	0.0	0.1	0.3	0.0	0.0
		East	0.0	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.3	0.0	0.1

Table C.7 Build Out+5 (2018) Alternative C: Day

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Taxi	As Shown	1.4	0.2	11.0	8.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
2	Taxi	As Shown	3.5	0.6	21.7	15.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
3	Taxi	As Shown	6.8	1.1	41.9	30.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	4.3	1.5	27.2	18.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
5	Taxi	As Shown	2.2	0.8	14.1	9.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
6	Taxi	As Shown	8.7	3.1	55.4	37.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
7a	Taxi	As Shown	0.0	0.0	0.0	5.1	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
7b	Taxi	As Shown	0.0	0.0	0.0	5.1	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	5.1	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
9	Taxi	As Shown	10.9	3.9	69.2	46.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	12.7	0.7
		Opposite	0.6	0.2	4.2	3.6	0.0
11	Taxi	As Shown	0.0	0.0	0.0	27.8	1.3
		Opposite	0.0	0.0	0.0	1.9	0.1
12	Taxi	As Shown	0.0	0.0	0.0	3.2	0.2
		Opposite	0.0	0.0	0.0	0.9	0.0
13	Taxi	As Shown	0.0	0.0	0.0	19.9	1.0
		Opposite	0.0	0.0	0.0	1.5	0.0
14	Taxi	As Shown	3.8	1.4	23.5	14.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
15	Taxi	As Shown	1.2	0.1	12.3	7.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	37.2	13.0	267.3	160.3	0.0
		Opposite	12.0	2.9	94.1	69.7	0.6
17	Taxi	As Shown	2.6	0.6	22.9	16.8	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Queue: Taxi/Idle	As Shown	49.8	16.3	335.4	201.3	0.0
	Taxi	Opposite	2.6	0.1	28.1	16.1	0.0
19	Taxi	As Shown	0.5	0.0	5.6	13.2	0.5
	Queue: Taxi/Idle	Opposite	1.2	0.2	5.3	3.6	0.0
20	Taxi	As Shown	4.6	2.7	0.5	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
21	Taxi	As Shown	27.9	9.8	200.5	150.0	1.5
		Opposite	0.0	0.0	0.0	0.0	0.0
22	Queue: Taxi/Idle	As Shown	67.2	24.3	649.5	435.2	1.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	5.7	0.8	57.2	20.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Queue: Taxi/Idle	As Shown	49.4	16.1	491.4	313.4	1.2
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
26	Queue: Taxi/Idle	As Shown	65.2	26.5	589.0	405.7	1.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	27.9	9.8	200.5	150.0	1.5
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	12.5	6.1	103.1	67.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	18.6	6.5	133.6	93.0	0.6
		Opposite	1.9	1.4	0.2	0.0	0.0
30	Queue: Taxi/Idle	As Shown	67.9	23.8	756.6	528.1	2.6
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
31	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
32	Queue: Taxi/Idle	As Shown	70.9	25.3	672.8	454.4	1.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
33	Queue: Taxi/Idle	As Shown	68.1	23.6	672.5	454.4	1.9
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
34	Taxi	As Shown	8.9	4.4	122.1	78.4	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	20.6	5.8	199.9	99.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
36	Taxi	As Shown	24.8	6.1	266.2	119.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	6.0	3.0	81.5	52.3	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	3.2	2.0	0.4	0.0	0.0
		Opposite	1.1	0.6	0.1	0.0	0.0
39	Taxi	As Shown	18.2	9.2	244.5	156.8	2.0
		Opposite	3.4	2.6	9.9	6.4	0.0
40	Taxi	As Shown	1.4	0.9	3.3	2.1	0.0
	Queue: Taxi/Idle	Opposite	2.0	0.6	16.4	11.1	0.0
41	Taxi	As Shown	2.1	1.3	5.0	3.2	0.0
		Opposite	4.6	2.7	0.5	0.0	0.0
42	Taxi	As Shown	0.0	0.0	24.9	17.4	0.3

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
43	Queue: Taxi/Idle	As Shown	5.4	1.9	78.4	53.5	0.5
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
44	Queue: Taxi/Idle	As Shown	8.1	2.8	88.5	60.0	0.3
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.7	0.6	6.4	4.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
46	Taxi	As Shown	0.1	0.1	0.8	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
47	Taxi	As Shown	0.2	0.2	2.4	1.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Taxi	As Shown	0.5	0.3	11.3	8.0	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
49	Taxi	As Shown	1.7	1.2	14.6	10.2	0.1
		Opposite	6.1	3.1	81.5	52.3	0.7
50	Taxi	As Shown	0.3	0.2	6.2	4.4	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	21.3	10.8	285.3	182.9	2.3
		Opposite	7.9	5.6	94.3	66.6	0.9
52	Taxi	As Shown	3.3	1.2	31.7	17.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
53	Taxi	As Shown	5.8	0.7	69.7	25.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	1.5	0.2	41.9	3.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
55	Taxi	As Shown	0.9	0.4	25.5	10.7	0.0
		Opposite	5.1	0.9	4.2	37.8	0.0
56	Taxi	As Shown	4.0	0.8	8.5	32.3	0.0
		Opposite	2.4	1.0	37.8	12.9	0.1
57	Taxi	As Shown	4.7	1.4	40.5	31.0	0.2
		Opposite	3.4	0.6	2.8	25.2	0.0
58	Taxi	As Shown	1.2	0.5	34.7	23.5	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
59	Taxi	As Shown	3.0	1.5	40.8	26.1	0.3
		Opposite	1.1	0.8	13.5	9.5	0.1
60	Taxi	As Shown	0.0	0.0	3.4	1.6	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.1	0.0	6.8	3.2	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	0.1	0.0	7.0	3.3	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	20.8	6.8	222.3	146.2	0.6
64	Taxi	As Shown	6.1	3.6	0.6	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
65a	Taxi	As Shown	0.2	0.0	27.6	13.0	0.8
	Queue: Taxi/Idle	Opposite	15.5	4.6	185.0	117.0	0.4
65b	Taxi	As Shown	0.2	0.0	20.7	9.7	0.6
		Opposite	1.8	0.0	41.4	22.0	0.0
66	Taxi	As Shown	6.5	3.4	19.9	9.2	0.0
		Opposite	1.7	0.9	0.3	0.0	0.0
67	Taxi	As Shown	5.8	3.4	21.5	9.7	0.6
	Queue: Taxi/Idle	Opposite	3.2	1.0	25.7	14.9	0.0
68	Taxi	As Shown	0.8	0.0	19.1	9.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Taxi	As Shown	6.5	3.4	40.6	18.9	0.6
		Opposite	0.4	0.3	0.1	0.0	0.0
70	Taxi	As Shown	0.6	0.2	16.3	11.1	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	3.5	2.5	40.5	28.5	0.4
		Opposite	7.4	4.0	70.3	43.1	0.8
72	Taxi	As Shown	3.2	0.6	41.5	22.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	3.3	2.2	40.4	28.5	0.4
		Opposite	0.0	0.0	0.0	0.0	0.0
74	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.3	0.6	0.1	0.0	0.0
75	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
76	Queue: Taxi/Idle	As Shown	18.9	5.9	136.7	127.2	0.4
	Taxi	Opposite	1.3	0.6	0.1	0.0	0.0
77	Taxi	As Shown	9.3	1.6	8.8	84.8	0.0
		Opposite	4.9	2.4	43.2	75.0	0.4
78	Queue: Taxi/Idle	As Shown	24.0	8.0	237.3	165.8	0.8
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
79	Taxi	As Shown	6.8	1.2	5.6	50.4	0.0
	Queue: Taxi/Idle	Opposite	22.7	7.4	213.5	151.5	0.7
80	Taxi	As Shown	15.6	2.6	14.7	141.4	0.0
		Opposite	8.2	4.1	72.0	125.0	0.6
81	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	2.0	0.0	66.5	17.0	0.0
82	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.8	0.9	24.6	8.7	0.0
83	Taxi	As Shown	9.7	2.9	100.1	51.0	0.4
		Opposite	0.0	0.0	0.0	0.0	0.0
84	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.5	0.0	0.0	0.0	0.0
85	Taxi	As Shown	9.7	2.9	100.1	51.0	0.4

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.8	0.9	24.6	8.7	0.0
87	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
88	Taxi	As Shown	4.0	2.8	26.2	29.4	3.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	1.8	0.9	24.6	8.7	0.0
90	Taxi	As Shown	0.8	0.3	12.2	3.7	0.1
		Opposite	0.0	0.0	0.0	0.0	0.0
91	Taxi	As Shown	0.8	0.3	12.2	2.9	0.0
		Opposite	1.0	0.2	0.6	6.7	0.0
92	Taxi	As Shown	2.0	0.5	1.2	13.4	0.0
		Opposite	1.5	0.6	24.3	5.7	0.0
93	Taxi	As Shown	0.8	0.3	12.2	2.9	0.0
		Opposite	1.0	0.2	0.6	6.7	0.0
94	Taxi	As Shown	2.3	1.1	6.9	19.0	0.2
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Taxi	As Shown	3.8	1.7	31.2	20.8	0.0
		Opposite	2.0	0.5	1.2	13.4	0.0
96	Taxi	As Shown	3.3	0.8	25.6	17.1	0.1
		Opposite	0.0	0.0	0.0	2.3	0.3
97	Taxi	As Shown	0.0	0.0	0.0	6.9	1.0
		Opposite	0.0	0.0	0.0	0.0	0.0
98	Taxi	As Shown	3.1	0.7	1.8	20.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
99	Queue: Taxi/Idle	As Shown	17.6	6.4	165.6	116.6	0.4
	Taxi	Opposite	0.0	0.0	0.0	2.1	0.1
100	Taxi	As Shown	0.2	0.0	0.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
101	Taxi	As Shown	0.0	0.0	0.0	2.2	0.3
		Opposite	4.3	1.1	26.2	23.8	0.1
102	Taxi	As Shown	0.0	0.0	0.0	4.4	0.7
		Opposite	6.6	1.7	51.3	34.2	0.2
103	Taxi	As Shown	14.4	2.2	96.9	64.9	0.0
	Queue: Taxi/Idle	Opposite	1.0	0.3	8.2	9.9	0.3
104	Taxi	As Shown	9.6	1.5	64.6	43.3	0.0
		Opposite	6.0	1.5	47.1	34.8	0.3
105	Taxi	As Shown	20.9	5.8	146.7	91.5	0.0
		Opposite	9.0	2.2	70.6	52.3	0.5
106	Taxi	As Shown	46.5	16.3	334.1	200.4	0.0
		Opposite	15.0	3.7	117.6	87.1	0.8
107	Taxi	As Shown	4.7	2.6	35.9	19.1	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
108	Taxi	As Shown	4.3	2.4	33.2	17.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Taxi	As Shown	0.0	0.0	0.0	0.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
110	Taxi	As Shown	0.0	0.0	0.0	35.7	2.0
		Opposite	1.7	0.5	12.7	10.7	0.1
111	Taxi	As Shown	0.0	0.0	0.0	30.4	2.0
		Opposite	1.7	0.5	12.7	10.7	0.1
112	Taxi	As Shown	0.6	0.2	4.2	3.6	0.0
		Opposite	0.0	0.0	0.0	1.2	0.0
113	Taxi	As Shown	0.0	0.0	0.0	4.4	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	14.4	2.2	96.9	64.9	0.0
	Queue: Taxi/Idle	Opposite	0.9	0.3	7.3	5.2	0.0
115	Taxi	As Shown	0.0	0.0	0.0	8.9	0.7
		Opposite	0.0	0.0	0.0	0.0	0.0
116	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117a	Taxi	As Shown	19.2	3.0	129.2	95.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117b	Taxi	As Shown	14.4	2.2	96.9	71.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117c	Taxi	As Shown	19.2	3.0	129.2	95.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
118	Taxi	As Shown	0.1	0.1	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
119	Taxi	As Shown	1.8	1.3	26.9	19.0	0.2
		Opposite	3.4	0.6	2.8	25.2	0.0
120	Taxi	As Shown	2.4	0.6	54.4	11.5	0.0
		Opposite	1.4	0.4	2.2	32.8	0.0
121a	Taxi	As Shown	0.0	0.0	41.4	29.0	0.6
		Opposite	0.0	0.0	0.0	0.0	0.0
121b	Taxi	As Shown	0.0	0.0	41.4	29.0	0.6
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	2.1	0.1
123	Queue: Taxi/Idle	As Shown	17.6	6.4	165.6	116.6	0.4
	Taxi	Opposite	1.0	0.2	0.6	6.7	0.0
124	Taxi	As Shown	0.9	0.4	0.1	0.0	0.0
		Opposite	2.9	1.2	17.7	21.8	0.0
W1	Gate: Taxi/Idle	As Shown	6.0	1.3	120.4	22.3	0.1
		Opposite	6.0	1.3	120.4	22.3	0.1
W2	Gate: Taxi/Idle	As Shown	7.5	1.4	183.2	22.3	0.1

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Day							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
W3	Gate: Taxi/Idle	Opposite	8.8	2.2	194.8	33.4	0.5
		As Shown	10.0	2.3	249.8	33.4	0.5
		Opposite	8.7	1.4	238.2	22.3	0.1
W4	Gate: Taxi/Idle	As Shown	16.4	4.9	370.5	74.7	0.7
		Opposite	18.6	3.7	303.3	137.6	0.1
S1	Gate: Taxi/Idle	As Shown	52.5	14.2	553.9	329.4	1.8
		Opposite	31.7	11.6	591.6	254.7	0.2
S2	Gate: Taxi/Idle	As Shown	36.8	12.7	446.2	288.1	1.2
		Opposite	20.3	11.0	354.7	243.2	0.2
S3E1	Gate: Taxi/Idle	As Shown	33.0	15.8	291.4	196.2	0.2
		Opposite	46.1	17.8	395.2	274.2	1.5
E2	Gate: Taxi/Idle	As Shown	14.1	2.9	33.8	9.6	0.0
		Opposite	21.1	6.9	201.8	162.5	1.3
E3	Gate: Taxi/Idle	As Shown	8.9	1.9	26.2	8.5	0.0
		Opposite	12.5	4.0	110.3	85.0	0.7
E4	Gate: Taxi/Idle	As Shown	4.7	1.0	15.0	6.1	0.0
		Opposite	4.7	1.0	15.0	6.1	0.0
C1	Gate: Taxi/Idle	As Shown	5.3	3.0	4.9	2.8	0.0
		Opposite	5.3	3.0	4.9	2.8	0.0
C2	Gate: Taxi/Idle	As Shown	4.9	2.9	4.7	2.8	0.0
		Opposite	4.9	2.9	4.7	2.8	0.0
G1	Gate: Taxi/Idle	As Shown	1.4	0.5	14.0	44.0	1.7
		Opposite	1.4	0.5	14.0	44.0	1.7
J1	Gate: Taxi/Idle	As Shown	14.7	4.0	51.3	111.4	0.1
		Opposite	25.4	7.4	175.1	157.5	0.6
J2	Gate: Taxi/Idle	As Shown	22.1	4.5	127.1	218.2	0.1
		Opposite	20.1	4.5	60.5	201.2	0.1
APUC1	APU	As Shown	440.1	262.9	57.7	0.0	0.0
		Opposite	440.1	262.9	57.7	0.0	0.0
APUC2	APU	As Shown	440.1	262.9	57.7	0.0	0.0
		Opposite	440.1	262.9	57.7	0.0	0.0
RUGRE	Run-up	As Shown	0.1	0.0	4.3	0.2	0.3
RU9	Run-up	South	0.1	0.1	0.1	0.0	0.0
		West	0.1	0.1	0.2	0.0	0.0
		East	0.1	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.3	0.0	0.0
RU32	Run-up	South	0.0	0.0	0.0	0.0	0.0
		West	0.0	0.0	0.0	0.0	0.0
		East	0.0	0.0	0.0	0.0	0.0
		North	0.0	0.0	0.0	0.0	0.0

Table C.8 Build Out+5 (2018) Alternative C: Night

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
1	Taxi	As Shown	0.0	0.0	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
2	Taxi	As Shown	0.0	0.1	0.3	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
3	Taxi	As Shown	0.0	0.2	0.5	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
4	Taxi	As Shown	0.1	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
5	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
6	Taxi	As Shown	0.1	0.1	0.0	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
7a	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
7b	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
8	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
9	Taxi	As Shown	0.1	0.1	0.0	0.5	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
10	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
11	Taxi	As Shown	0.0	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
12	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
13	Taxi	As Shown	0.0	0.0	0.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
14	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
15	Taxi	As Shown	0.0	0.0	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
16	Taxi	As Shown	0.0	0.6	2.1	1.6	0.0
		Opposite	0.1	0.1	0.5	0.6	0.0
17	Taxi	As Shown	1.1	1.2	2.9	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
18	Queue: Taxi/Idle	As Shown	0.7	1.2	3.9	2.3	0.0
	Taxi	Opposite	0.0	0.0	0.3	0.0	0.0
19	Taxi	As Shown	0.0	0.0	0.1	0.2	0.0
	Queue: Taxi/Idle	Opposite	1.7	1.8	4.9	1.1	0.0
20	Taxi	As Shown	0.0	0.1	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
21	Taxi	As Shown	0.0	0.5	1.6	1.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
22	Queue: Taxi/Idle	As Shown	3.2	3.6	11.2	2.7	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
23	Taxi	As Shown	0.2	0.0	1.3	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
24	Queue: Taxi/Idle	As Shown	2.5	2.7	8.5	1.9	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
25	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
26	Queue: Taxi/Idle	As Shown	2.5	2.8	10.7	3.0	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
27	Taxi	As Shown	0.0	0.5	1.6	1.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
28	Taxi	As Shown	0.0	0.1	2.3	0.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
29	Taxi	As Shown	0.0	0.3	1.1	1.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
30	Queue: Taxi/Idle	As Shown	0.2	0.7	4.2	1.3	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
31	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
32	Queue: Taxi/Idle	As Shown	4.2	4.7	12.5	2.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
33	Queue: Taxi/Idle	As Shown	4.2	4.6	12.5	2.8	0.1
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
34	Taxi	As Shown	1.2	2.0	1.6	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
35	Taxi	As Shown	7.0	8.5	18.2	2.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
36	Taxi	As Shown	8.3	9.0	24.2	2.9	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
37	Taxi	As Shown	0.8	1.4	1.1	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
38	Taxi	As Shown	0.0	0.1	0.0	0.0	0.0
		Opposite	0.3	0.4	0.0	0.0	0.0
39	Taxi	As Shown	2.3	4.2	3.3	1.3	0.0
		Opposite	0.6	1.2	0.0	0.0	0.0
40	Taxi	As Shown	0.3	0.4	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	0.1	0.0	0.0	0.0	0.0
41	Taxi	As Shown	0.4	0.6	0.0	0.0	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
42	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
43	Queue: Taxi/Idle	As Shown	0.0	0.0	0.0	0.0	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
44	Queue: Taxi/Idle	As Shown	0.0	0.0	0.0	0.0	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
45	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
46	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
47	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
48	Taxi	As Shown	0.0	0.1	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
49	Taxi	As Shown	0.2	0.5	0.1	0.1	0.0
		Opposite	0.8	1.4	1.1	0.4	0.0
50	Taxi	As Shown	0.0	0.0	0.1	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
51	Taxi	As Shown	2.7	4.8	3.8	1.5	0.0
		Opposite	0.9	1.9	1.0	0.4	0.0
52	Taxi	As Shown	1.1	1.7	2.9	0.4	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
53	Taxi	As Shown	1.9	1.0	6.4	0.6	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
54	Taxi	As Shown	0.5	0.3	4.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
55	Taxi	As Shown	0.4	0.8	3.2	0.4	0.0
		Opposite	1.7	1.4	0.4	0.9	0.0
56	Taxi	As Shown	0.4	0.5	0.7	0.4	0.0
		Opposite	0.1	0.1	0.3	0.1	0.0
57	Taxi	As Shown	1.6	1.9	5.1	1.1	0.0
		Opposite	1.1	0.9	0.3	0.6	0.0
58	Taxi	As Shown	0.1	0.1	0.5	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
59	Taxi	As Shown	0.4	0.7	0.5	0.2	0.0
		Opposite	0.1	0.3	0.1	0.1	0.0
60	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
61	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
62	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
63	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
	Queue: Taxi/Idle	Opposite	0.9	1.0	3.1	0.8	0.0
64	Taxi	As Shown	0.0	0.2	0.0	0.0	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
65a	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
		As Shown	0.0	0.0	0.0	0.0	0.0
		Queue: Taxi/Idle	0.9	1.0	3.5	1.0	0.0
65b	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.6	0.3	0.0
66	Taxi	As Shown	0.9	1.9	0.3	0.1	0.0
		Opposite	0.0	0.1	0.0	0.0	0.0
67	Taxi	As Shown	0.9	1.9	0.0	0.0	0.0
		Queue: Taxi/Idle	0.1	0.1	0.3	0.2	0.0
68	Taxi	As Shown	0.0	0.0	0.3	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
69	Taxi	As Shown	0.9	1.9	0.3	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
70	Taxi	As Shown	0.1	0.0	0.3	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
71	Taxi	As Shown	0.4	0.8	0.4	0.2	0.0
		Opposite	1.0	2.0	0.8	0.3	0.0
72	Taxi	As Shown	0.1	0.0	0.6	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
73	Taxi	As Shown	0.4	0.8	0.4	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
74	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
75	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
76	Queue: Taxi/Idle	As Shown	5.8	6.2	12.0	3.5	0.1
		Taxi	0.0	0.0	0.0	0.0	0.0
77	Taxi	As Shown	0.1	0.1	0.1	0.8	0.0
		Opposite	0.5	0.6	0.6	1.1	0.0
78	Queue: Taxi/Idle	As Shown	7.8	9.2	23.2	5.1	0.1
		Taxi	0.0	0.0	0.0	0.0	0.0
79	Taxi	As Shown	2.3	1.8	0.5	1.2	0.0
		Queue: Taxi/Idle	7.1	8.2	21.8	4.7	0.1
80	Taxi	As Shown	0.2	0.1	0.1	1.3	0.0
		Opposite	0.8	1.0	1.0	1.9	0.0
81	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.9	0.3	0.0
82	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	0.9	0.1	0.0
83	Taxi	As Shown	0.6	0.5	0.6	0.8	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
84	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.0	0.0	0.0
85	Taxi	As Shown	0.6	0.5	0.6	0.8	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	0.0	0.0	0.0	0.0	0.0
86	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	0.9	0.1	0.0
87	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
88	Taxi	As Shown	0.3	0.2	1.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
89	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.1	0.9	0.1	0.0
90	Taxi	As Shown	0.1	0.0	0.5	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
91	Taxi	As Shown	0.1	0.0	0.5	0.0	0.0
		Opposite	0.1	0.0	0.0	0.1	0.0
92	Taxi	As Shown	0.1	0.0	0.0	0.2	0.0
		Opposite	0.1	0.0	0.9	0.1	0.0
93	Taxi	As Shown	0.1	0.0	0.5	0.0	0.0
		Opposite	0.1	0.0	0.0	0.1	0.0
94	Taxi	As Shown	0.2	0.1	0.3	0.3	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
95	Taxi	As Shown	0.3	0.1	1.2	0.3	0.0
		Opposite	0.1	0.0	0.0	0.2	0.0
96	Taxi	As Shown	0.0	0.0	0.1	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
97	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
98	Taxi	As Shown	0.2	0.0	0.0	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
99	Queue: Taxi/Idle	As Shown	1.0	0.9	3.2	0.8	0.0
	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
100	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
101	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.1	0.2	0.0
102	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.1	0.0	0.3	0.3	0.0
103	Taxi	As Shown	0.0	0.3	1.2	0.7	0.0
	Queue: Taxi/Idle	Opposite	0.0	0.0	0.0	0.2	0.0
104	Taxi	As Shown	0.0	0.2	0.8	0.4	0.0
		Opposite	0.1	0.0	0.3	0.3	0.0
105	Taxi	As Shown	0.0	0.4	1.4	0.9	0.0
		Opposite	0.1	0.0	0.4	0.4	0.0
106	Taxi	As Shown	0.0	0.8	2.7	2.0	0.0
		Opposite	0.1	0.1	0.7	0.7	0.0
107	Taxi	As Shown	0.0	0.0	0.1	0.2	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
108	Taxi	Opposite	0.0	0.0	0.0	0.0	0.0
		As Shown	0.0	0.0	0.1	0.2	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
109	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
110	Taxi	As Shown	0.0	0.0	0.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
111	Taxi	As Shown	0.0	0.0	0.0	0.3	0.0
		Opposite	0.0	0.0	0.0	0.1	0.0
112	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
113	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
114	Taxi	As Shown	0.0	0.3	1.2	0.7	0.0
	Queue: Taxi/Idle	Opposite	0.1	0.0	0.1	0.0	0.0
115	Taxi	As Shown	0.0	0.0	0.0	0.1	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
116	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117a	Taxi	As Shown	0.0	0.4	1.6	1.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117b	Taxi	As Shown	0.0	0.3	1.2	0.7	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
117c	Taxi	As Shown	0.0	0.4	1.6	1.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
118	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
119	Taxi	As Shown	0.1	0.2	0.3	0.1	0.0
		Opposite	1.1	0.9	0.3	0.6	0.0
120	Taxi	As Shown	0.3	0.1	2.4	0.2	0.0
		Opposite	0.0	0.1	0.1	0.5	0.0
121a	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
121b	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
122	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.0	0.0	0.0	0.0	0.0
123	Queue: Taxi/Idle	As Shown	1.0	0.9	3.2	0.8	0.0
	Taxi	Opposite	0.1	0.0	0.0	0.1	0.0
124	Taxi	As Shown	0.0	0.0	0.0	0.0	0.0
		Opposite	0.2	0.1	0.7	0.3	0.0
W1	Gate: Taxi/Idle	As Shown	0.6	0.5	4.2	0.3	0.0
		Opposite	0.6	0.5	4.2	0.3	0.0
W2	Gate: Taxi/Idle	As Shown	0.9	0.5	6.8	0.3	0.0

Average Annual Daily Ground Noise Source Operating Durations (in minutes)							
Build Out+5 (2018) Alternative C: Night							
Source	Activity	Orientation (indicated in figure)	Jumbo Jet	Heavy Jet	Large Jet	Regional Jet	Turboprop
		Opposite	1.0	0.5	7.3	0.4	0.0
W3	Gate: Taxi/Idle	As Shown	1.2	0.6	9.6	0.4	0.0
		Opposite	1.1	0.5	9.1	0.3	0.0
W4	Gate: Taxi/Idle	As Shown	1.8	0.8	13.6	1.0	0.0
		Opposite	1.6	0.7	11.7	1.8	0.0
S1	Gate: Taxi/Idle	As Shown	7.5	7.9	16.8	4.2	0.0
		Opposite	4.3	5.4	34.6	3.8	0.0
S2	Gate: Taxi/Idle	As Shown	4.9	5.5	13.1	3.6	0.0
		Opposite	1.5	3.8	12.9	3.4	0.0
S3E1	Gate: Taxi/Idle	As Shown	1.5	2.6	8.5	2.5	0.0
		Opposite	1.5	2.8	8.7	3.5	0.0
E2	Gate: Taxi/Idle	As Shown	1.3	0.8	1.2	0.1	0.0
		Opposite	1.3	1.6	8.1	2.4	0.0
E3	Gate: Taxi/Idle	As Shown	0.7	0.5	0.9	0.1	0.0
		Opposite	0.7	1.0	4.4	1.3	0.0
E4	Gate: Taxi/Idle	As Shown	0.4	0.3	0.5	0.1	0.0
		Opposite	0.4	0.3	0.5	0.1	0.0
C1	Gate: Taxi/Idle	As Shown	0.7	1.4	0.2	0.0	0.0
		Opposite	0.7	1.4	0.2	0.0	0.0
C2	Gate: Taxi/Idle	As Shown	0.4	0.6	0.2	0.0	0.0
		Opposite	0.4	0.6	0.2	0.0	0.0
G1	Gate: Taxi/Idle	As Shown	0.2	0.2	0.5	0.6	0.0
		Opposite	0.2	0.2	0.5	0.6	0.0
J1	Gate: Taxi/Idle	As Shown	1.3	0.9	1.7	1.5	0.0
		Opposite	1.4	1.0	2.4	1.9	0.0
J2	Gate: Taxi/Idle	As Shown	2.4	2.1	3.0	3.1	0.0
		Opposite	2.3	2.1	2.1	2.8	0.0
APUC1	APU	As Shown	86.0	165.7	3.4	0.0	0.0
		Opposite	86.0	165.7	3.4	0.0	0.0
APUC2	APU	As Shown	86.0	165.7	3.4	0.0	0.0
		Opposite	86.0	165.7	3.4	0.0	0.0
RUGRE	Run-up	As Shown	0.2	0.1	27.1	2.7	2.8
RU9	Run-up	South	0.3	0.2	2.4	0.0	0.1
		West	0.3	0.2	2.1	0.0	0.0
		East	0.2	0.0	1.0	0.0	0.0
		North	0.5	0.3	4.0	0.1	0.1
RU32	Run-up	South	0.1	0.0	0.3	0.0	0.0
		West	0.1	0.1	0.4	0.0	0.0
		East	0.0	0.0	0.1	0.0	0.0
		North	0.1	0.1	0.4	0.0	0.1